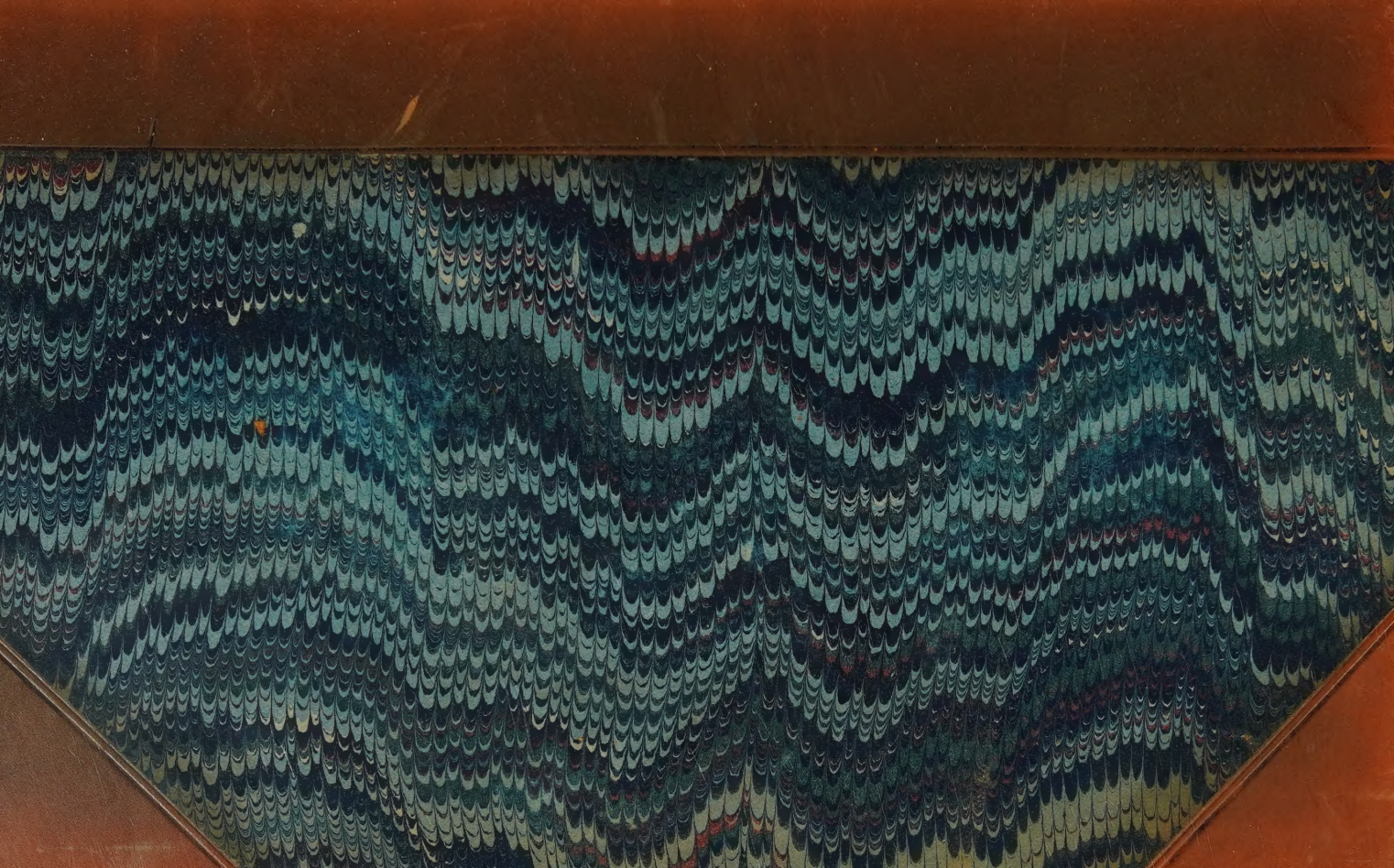

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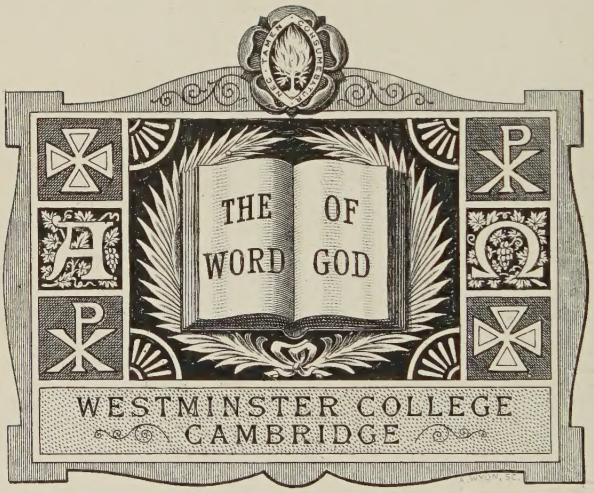

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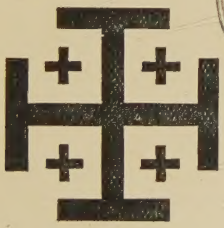
PALESTINE EXPLORATION FUND.

Patron—THE QUEEN.

Quarterly Statement

FOR 1898.



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THE
PALESTINE EXPLORATION FUND.

NOTES AND NEWS.

The lease of the premises occupied by the Fund at 24, Hanover Square, will expire on the 24th of March next. The Committee have secured a new and more commodious suite of rooms at **38, CONDUIT STREET, W.**, into which the office, library, and museum will be transferred in the spring. All communications should continue to be addressed to 24, Hanover Square, until March 21st.

Dr. Bliss's detailed account of his three years' work at Jerusalem is now in the press, and will be published shortly as a separate volume, with the title "Excavations at Jerusalem, 1894–1897." The book will be copiously illustrated by maps and plates.

The Committee are fully hoping to receive at an early date permission from His Imperial Majesty the Sultan to continue the work of excavation in Palestine. As soon as the Firman is granted, arrangements will be made for carrying out these important researches.

Privy Councillor B. von Khitrovo, of St. Petersburg, in a recent pamphlet on the importance of securing photographs and plans of ancient remains, observes: "What has hitherto preserved the ancient monuments was *the desert which surrounded them.* This desert is disappearing year by year, the stones of the old buildings which had stood for centuries are being used for new buildings."

Dr. C. Schick has contributed several interesting papers embodying his views with regard to the identification of some important Biblical sites. His articles on Ramathaim-Zophim and Bezek will be found in the present number.

By an accidental omission in our last issue no reference was made to the fact that the illustrations to Mr. Spiers's description of the Great Mosque at Damascus were taken from blocks kindly lent to us by the Council of the Royal Institute of British Architects.

The income of the Society, from September 18th, 1897, to December 21st, 1897, was—from legacy left by the late Edward Cooper, Esq., £1,000; annual subscriptions and donations, including Local Societies, £650 15*s.* 1*d.*; from Lectures, £4 13*s.* 0*d.*; from sales of publications, &c., £192 17*s.* 4*d.*; total, £1,848 5*s.* 5*d.* The expenditure during the same period was £1,400 10*s.* 2*d.*, which included £928 1*s.* 1*d.* liabilities paid off. On December 21st the balance in the Bank was £677 7*s.* 5*d.*

H. R. Webb, Esq., Christchurch, Canterbury, New Zealand, has kindly consented to act as Honorary Local Secretary for that district.

Memo. for Subscribers to the Survey of Palestine.—In the original programme it was intended that the "Archæological Researches" of M. Clermont-Ganneau should be published in one volume, but the work increased so much since its commencement that the Committee found it necessary to arrange for the publication of the whole in two volumes. Vol. II has been published in advance for the reasons stated in the prefatory note.

Vol. I, which treats of Jerusalem and its neighbourhood, is now well forward, and, when ready, will be sent out to the first 250 Subscribers without any increase in their subscriptions for the full set.

The set consists of "The Survey of Eastern Palestine," by Lieut.-Colonel Conder, LL.D., R.E., in one vol.; "The Fauna and Flora of Sinai, Petra, and the Wâdy 'Arabah," by H. Chichester Hart, B.A., in one vol.; "The Archæological Researches," by Professor Clermont-Ganneau, in two vols. Four volumes in all.

There are only a few copies of the sets left at the price of £7 7*s.*

Lieut.-Colonel Conder's work, "The Latin Kingdom of Jerusalem"—1099 to 1292 A.D.—describing the condition of Palestine under the Crusaders, is based on the chronicles and contemporary accounts, both Christian and Moslem, and on the information collected during the progress of the Survey, with descriptions of the scenes of the important events, and other information not to be found in previous histories of the Crusades. It forms an octavo volume of over 400 pages, with two maps, giving the Crusading names and boundaries of the "Fiefs" throughout Palestine.

A translation of Behâ ed Dîn's "Life of Saladin," A.D. 1145-1232, forms the concluding volume of the Palestine Pilgrims' Text Series.

This translation has been compared with the original Arabic, and annotated by Lieut.-Colonel Conder, LL.D., R.E., with a preface and notes by Major-General Sir Charles Wilson, K.C.B., F.R.S., R.E.

Copies bound in cloth, with an index, *can be had separately*. Price to Subscribers to the Fund, 6*s*. 6*d*.

The price of a complete set of these translations, in 13 volumes, with general index, bound in cloth, is £10 10*s*. A catalogue describing the contents of each volume can be had on application to the Secretary, 24, Hanover Square.

Mr. George Armstrong's Raised Map of Palestine is on view at the office of the Fund. A circular giving full particulars about it will be sent on application to the Secretary.

The fourth edition of the new Collotype Print or Photo-relief from a specially prepared copy of the Raised Map of Palestine is now ready. Price to subscribers, 2*s*. 3*d*.; non-subscribers, 3*s*. 3*d*., post free.

The print is on thin paper, measuring 20 inches by 28½ inches.

It may be well to mention that plans and photographs alluded to in the reports from Jerusalem and elsewhere cannot all be published, but all are preserved in the office of the Fund, where they may be seen by subscribers.

Branch Associations of the Bible Society, all Sunday Schools within the Sunday School Institute, the Sunday School Union, and the Wesleyan Sunday School Institute, will please observe that by a special Resolution of the Committee they will henceforth be treated as subscribers and be allowed to purchase the books and maps (by application only to the Secretary) at reduced price.

The Committee have to acknowledge with thanks the following donations to the Library of the Fund :—

"Souvenirs de Terre-Sainte," with 59 illustrations. By Lucien Gautier. From the Author.

"Inscriptions Arabes de Syrie." By Max Van Berchem. From the Author.

"Histoire de Baalbek." By Michel M. Alouf. From the Author.

"The Sanctuary or Tent of Meeting." By G. Woolworth Colton. From the Author.

"Six Weeks in Egypt." By Mrs. C. J. Brook. From the Author.

"Egyptian (Arabic) Self-Taught." By C. A. Thimm, F.R.G.S. From the Publishers, E. Marlborough and Co.

"Abraham and His Age." By the Rev. Henry George Tomkins. From the Publishers, Eyre and Spottiswoode.

Nos. 24–29 of M. Clermont-Ganneau's "Études d'Archéologie Orientale" have also reached us.

The Committee will be glad to receive donations of Books to the Library of the Fund, which already contains many works of great value relating to Palestine and other Bible Lands. A catalogue of Books in the Library will be found in the July *Quarterly Statement*, 1893.

While desiring to give publicity to proposed identifications and other theories advanced by officers of the Fund and contributors to the pages of the *Quarterly Statement*, the Committee wish it to be distinctly understood that by publishing them in the *Quarterly Statement* they neither sanction nor adopt them.

In order to make up complete sets of the *Quarterly Statement* the Committee will be very glad to receive any of the back numbers.

Subscribers who do not receive the *Quarterly Statement* regularly are asked to send a note to the Secretary. Great care is taken to forward each number to those who are entitled to receive it, but changes of address and other causes occasionally give rise to omissions.

The Committee of the Palestine Exploration Fund desire to make clear that they have no book on their List of Publications called "Picturesque Palestine," nor is any person authorised to represent this book as published by the Society; nor has the Society any book-hawkers in its employment.

Tourists are cordially invited to visit the Loan Collection of "Antiques" in the Jerusalem Association Room of the Palestine Exploration Fund, opposite the Tower of David, Jerusalem. Hours: 8 to 12, and 2 to 6. Maps of Palestine and Palestine Exploration Fund publications are kept for sale.

Photographs of Dr. Schick's models (1) of the Temple of Solomon, (2) of the Herodian Temple, (3) of the Haram Area during the Christian occupation of Jerusalem, and (4) of the Haram Area as it is at present, have been received at the office of the Fund. Sets of these photographs, with an explanation by Dr. Schick, can be purchased by applying to the Secretary, 24, Hanover Square, W.

The authorised lecturers for the Society are—

America.

Professor Theodore F. Wright, Ph.D., 42, Quincy Street, Cambridge, Mass., Honorary General Secretary of the Palestine Exploration Fund for the United States. His subjects are as follows:—

(1) *The Building of Jerusalem.*
(2) *The Overthrow of Jerusalem.*
(3) *The Progress of the Palestine Exploration.*

ENGLAND.

The Rev. Thomas Harrison, F.R.G.S., The Vicarage, Appledore, Ashford, Kent. His subjects are as follows :—

(1) *Research and Discovery in the Holy Land.*
(2) *Bible Scenes in the Light of Modern Science.*
(3) *The Survey of Eastern Palestine.*
(4) *In the Track of the Israelites from Egypt to Canaan.*
(5) *The Jordan Valley, the Dead Sea, and the Cities of the Plain.*
(6) *The Recovery of Jerusalem*—(*Excavations in* 1894).
(7) *The Recovery of Lachish and the Hebrew Conquest of Palestine.*
(8) *Archæological Illustrations of the Bible.* (Specially adapted for Sunday School Teachers).

N.B.—All these Lectures are illustrated by specially prepared lantern slides.

The Rev. Charles Harris, M.A., F.R.G.S., Appledore, Ashford, Kent. (All Lectures illustrated by lantern slides.) His subjects are as follows :—

(1) *Modern Discoveries in Palestine.*
(2) *Stories in Stone; or, New Light on the Old Testament.*
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Bible Stories from the Monuments, or Old Testament History in the Light of Modern Research :—

(4) A. *The Story of Joseph; or, Life in Ancient Egypt.*
(5) B. *The Story of Moses; or, Through the Desert to the Promised Land.*
(6) C. *The Story of Joshua; or, The Buried City of Lachish.*
(7) D. *The Story of Sennacherib; or Scenes of Assyrian Warfare.*
(8) E. *The Story of the Hittites; or, A Lost Nation Found.*

SCOTLAND.

The Rev. James Smith, B.D., F.S.A., F.R.G.S., St. George's-in-the-West Parish, Aberdeen.

His subjects are as follows :—

(1) *The Palestine Exploration Fund.*
(2) *A Pilgrimage to Palestine.*
(3) *Jerusalem—Ancient and Modern.*
(4) *The Temple Area, as it now is.*
(5) *The Church of the Holy Sepulchre.*
(6) *A Visit to Bethlehem and Hebron.*
(7) *Jericho, Jordan, and the Dead Sea.*

The Rev. W. Burnet Thomson, M.A., B.D., Galashiels, N.B. His subjects are as follows :—

(1) *The City of the Great King; or Jerusalem and the Explorer.*
(2) *The Temple, the Sepulchre, and Calvary.*
(3) *Southern Palestine.*
(4) *Jerusalem to Damascus.*
(5) *Palestine and Jesus Christ* (*for children*).
(6) *The Bible and the Monuments. Discoveries in Ancient Land.*

All illustrated with lantern slides.

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The Rev. J. Llewelyn Thomas, M.A., Aberpergwm, Glynneath, South Wales. His subjects are as follows:—

(1) *Explorations in Judea.*
(2) *Research and Discovery in Samaria and Galilee.*
(3) *In Bible Lands; a Narrative of Personal Experiences.*
(4) *The Reconstruction of Jerusalem.*
(5) *Problems of Palestine.*

Application for Lectures may be either addressed to the Secretary, 24, Hanover Square, W., or sent to the address of the Lecturers.

PALESTINE EXPLORATION FUND

MAP
TO ILLUSTRATE Dr SCHICK'S
PAPERS ON
RAMATHAIM ZOPHIM
AND ADONI'S BEZEK

Scales

MILE 1 0 1 2 MILES

KILOM 1 0 1 2 3 4 KILOM

RAMATHAIM-ZOPHIM—THE HOME OF SAMUEL THE PROPHET.

By Dr. C. Schick.

1. The words in Scripture, "Gibeah" and "Ramah," or "Ramath," mean "heights" in general, but sometimes they became *proper names* of inhabited places or towns. And as this happened in more than one instance, some further word was needed to indicate what Gibeah or what Ramah was meant. When mentioned without such further word, it is often not clear whether a height or a town is intended. This has caused much confusion and difficulty in the study of the topography of Holy Scripture. In consequence, also, the home of Samuel the Prophet is put by scholars in various places, although a second word is added in 1 Sam. i, 1, in order to distinguish it from others. But there are so many circumstances connected with Samuel's home, and it is so difficult to bring them all into harmony, that it is quite natural that various ideas have been formed and brought forward respecting it.

Samuel's home—birthplace, abode during his life, and finally his tomb—in 1 Sam. i, 1, is called "Ramathaim-Zohpim" and is given in the plural or dual form, as if it were not *one* city only but at least *two* having some connection one with the other. In verse 19 of the same chapter and in many other passages it is simply called Ramath,[1] the dual reduced to "th" or, in the English, to "h" only. It might be that of the Ramaths so often mentioned one or more may in some passages mean quite another city, but a close study makes it probable that one and the same, viz., Samuel's home, is always meant.

According to 1 Sam. i, 1, Samuel's father, Elkanah, was a citizen of Ramathaim-Zophim, and in ii, 11, it is said that his house was at Ramath, apparently one and the same place. From vii, 17, it appears that his son, Samuel, also had his house there, to which he always returned from his official journeys; from viii, 4, we learn that there the elders of the people gathered to him; and in xxv, 1, it is recorded that "they buried him in his house at Ramah," the same place being always meant. So far all is clear. But when we come to the question of its *situation*, difficulties arise from the words in i, 1, "of Mount Ephraim," as indicating that this Ramah was in the land of the *tribe* of Ephraim. But this is not the

[1] 1 Sam. ii, 11; vii, 17; viii, 4; xv, 34; xvi, 13.

meaning. It is not said in the tribe, but simply in Mount Ephraim, but the original reading may not improbably have been "Ephrath" (*Quarterly Statement*, 1883, p. 52), for the text adds immediately: "the son of Zuph, an Ephrathite," *i.e.*, a *Bethlehemite*. So the high mountains in the Bethlehem district very suitably had the name of Zuph or Mountains of the Zuphites, or of the Ephrathites, hence Mount Ephrath, or the high part of the Bethlehem district, especially of the family Zuph or of the Zophim.[1] All this shows that the home of Elkanah, who was an Ephrathite and descendant of Zuph, must have been in the neighbourhood of Bethlehem, which hence was also the home of Samuel, his son. That this Ramah was *south* of Rachel's tomb we learn from 1 Sam. x, 2, when Saul, parting from Samuel at Ramah and travelling northwards, came first to Rachel's sepulchre.

Ramah itself must have been a *double town* with still higher ground behind it, on which was a place for offering and a "Naioth" connected with it, as Samuel and Saul had to go from Ramah *up* to it (1 Sam. ix, 19), and from this height go *down* to the city again (1 Sam. ix, 25) and lower than the city, a place where water could be drawn must be there (ix, 11). All this is known to everyone, but now comes the applying it to the spot or the identification of the sites. By the endeavours to identify Ramah, there has arisen an interesting controversy of which I have briefly to speak.

2. *The Controversy.*—Taking all the requirements in regard of Samuel's Ramah, the Rev. W. F. Birch published under the heading, "The Nameless City," several articles in the *Quarterly Statements*, and identified the "Bakoosh Hill," west of Solomon's Pools, with Ramah first in 1879, p. 130. On its eastern slope the late English Consul Finn built a cottage for a summer residence,[2] and making excursions in the neighbourhood from there described what he found in his "Byways of Palestine," mentioning among other things, also, an *ancient offering place* on the height of these hills, which Mr. Birch took as the offering place of Samuel, and hence supposed that somewhere on the Bakoosh Hill the site of the ancient city, Ramah, will be found. To this Captain, now Colonel, Conder made objections in the *Quarterly Statement*, 1879, p. 171, showing the impossibility of such being the case. But he also made some mistakes, and so Mr. Birch could in the *Quarterly Statement*, 1880, p. 104, still keep up his idea, correcting at p. 240 some of the errors he had made and adding some new points. As in this matter the narrative of Saul's journey seeking for asses and finding a kingdom has an important bearing, it is, hence, of the greatest importance that the names and points mentioned in it be rightly interpreted, so there was a great field open for all sorts of suggestions. Even I myself entered the field (*Quarterly Statement*, 1883, p. 110), but find now that I was wrong in my ideas at that time. A careful investigation of the Bakoosh Hill was made by members of the

[1] See *Quarterly Statement*, 1883, pp. 50, 156.

[2] "Memoirs," p. 86.

Survey party and Dr. Chaplin and reported upon in the *Quarterly Statement*, 1882, p. 165, proving that there had been no city; but "Râs esh Sherifeh"—the most important height in reference to this question and of which Mr. Finn had in reality spoken in his 'Byways"—was not examined, so things stood as before. In the *Quarterly Statement*, 1883, p. 48, a new and much modified article by Mr. Birch appeared, keeping up the ideas formerly expressed and strengthening them with new arguments, but locating Ramah on the Beit Jâla hills. To this, on p. 156, some objections were made, on which, at p. 183, some remarks were made by Colonel Conder, and a definition of the names mentioned in Saul's journey bearing on the point was given, showing that the "nameless city," where Saul became anointed as king, was not Ramah but Kirjath Jearim, as the Survey had found at "Khŭrbet 'Erma" an ancient *Bama*, or "high place," and this had been identified with Kirjath Jearim. Upon this suggestion another article appeared in the *Quarterly Statement*, 1884, pp. 51 and 144, demonstrating rather in a questioning way that the city of Kirjath Jearim has nothing to do with Samuel's Ramah.

Now, it is not my intention to take part in this controversy or to prolong it, but rather to tell of the results of my own investigation of the site mentioned in it, and to endeavour to put things right.

3. *My Investigations.*—Having read all this I felt a desire to go and see these places, and when comparing the statements with those given on the large map, I became convinced that there must be some mistakes or, rather, omissions which I could only find out by going to the various places. Recently I was able to carry out this intention and will describe what I found, and for a better and easier understanding of the various points and sites have prepared the accompanying map—a copy of the large map enlarged—in order to be enabled to put all things with their names, &c., clearly and not open for misconceptions. In describing the things I follow the order in which I visited them:—

(A) *The General Situation.*—South of the Beit Jâla hills, the watershed of the Judæan Mountains forms a plain or even ground, about one mile in extent; on its western end the village El Khŭdr[1] and the Greek Convent of St. George stand. Some shallow valleys coming down from the hills north and south fall into it, and others begin towards nearly all directions, first with very little decline, and only on leaving the plain beginning to fall rapidly, so that in winter time the rain-water does not everywhere run quickly away from the plain, but forms, especially in the rear of the Beit Jâla hills, a lake, the so-called Balû'a, which dries up in summer. At the south-east corner of the plain a watercourse goes also down to Solomon's Pools. The east part of the southern hills bounding this plain is the Bakoosh Hill, the first step in the rising of the high mountains of this district, or the Râs esh Sherifeh, 3,258 feet high, whereas the plain of El Khŭdr is only on on average about 2,638 feet. This first range of hills, ending on the east with the Bakoosh Hill, is divided from the higher

[1] "Memoirs," p. 26.

hill by a valley issuing into a little plain about a quarter of a mile above the pools, and called Wâdy Burak, on account of the pools.[1] Higher up it has side valleys, and is called "Wad bayn es Sakhrah," *i.e.*, the valley between the rocks or the cliffs. This is a special feature of it, that a lower and horizontal strip of land is bounded on both sides by rock-cliffs—as if there had once been a broad river there. Above the cliffs is still, on both sides, arable land to the foot of the hills. At the upper end of this valley is 'Ain Kŭssîs, and the new Hebron road goes up the eastern slope of a side valley. On this new road stand kilometre stones. On the height north of the pools is the twelfth (from Jaffa Gate, Jerusalem). A little south of it the old road goes directly southwards down to the castle and the Upper Pool, and then ascends the rocky hill beyond, whereas the new road makes some bendings westwards, keeping on higher ground, and along the lower part of the eastern side of the Bakoosh Hill, where higher up (about half the height of the hill) stands Mr. Finn's cottage. It enters the Wâdy Burak a little before the thirteenth kilometre stone, crossing it and then going up along the side valley. Coming to the top of the ridge, or rather to a saddle of the ridge, one sees on the east Kh. 'Alia[2] on a rocky height, named in the large map, but the sign of its situation is omitted; and in view is another valley running from west to east, omitted on the large map, and called W. Suakeh. Opposite to it in the south, also on the height, is another khŭrbet, or ruined city, called Kh. Bireh, the lost Beersheba, where Samuel's sons judged the people, of which I will speak afterwards. This Wady Suakeh goes down to the other valley with the pools, entering a little below the Lower Pool and has the 'Ain 'Atân in it, about a quarter of a mile higher up. Here are the various aqueducts which formerly fed the pools, as shown on the map. The one coming from Wâdy el Bîâr and crossing the ridge by a tunnel goes to the Upper Pool, and the other, coming from Wâdy 'Arrûb and lying at a lower level brought the water to the Middle Pool. It is built in a serpentine line, always on the side of the mountain, and has, therefore, an immense length. Now, at the last part of the ridge which the two aqueducts cross is the ruined site of a former city, on a rocky knoll, with deep valleys on both sides. It is now called Kh. Wâd el Hoch (Khôkh[3]), but this is a modern name, given from apricot trees growing in the valley. The site is certainly that of the ancient Etam, built and fortified by Rehoboam (2 Chron. xi, 6). After this short digression I go back to the new Hebron road, a little west of Khŭrbet 'Alia; it runs south-westwards on the northern side of Wâdy Suakeh, always rising a little till the beginning of the valley, where, after having passed the fourteenth kilometre stone, it turns southwards, and passing the ridge on which Kh. Bireh is situated on the east, and making some windings, comes to 'Ain Maksûr, which is given on the large map, making here a

[1] "Memoirs," p. 89.
[2] *Ibid.*, p. 107.
[3] Omitted in large map.

bend, and passes the fifteenth kilometre stone, where a nice view is opened towards the south and east, and where my guide, a man from El Khŭdr, pointed out all the various khŭrbets and sites which can here be seen. Most of them I did already know, except one, Kh. Sekunda. Proceeding on our way, we had always the height of Râs esh Sherifeh to our right (west), and on our left beyond the Wâdy el Bîâr, and forming its eastern side, the straight and high range, like an unbroken wall, and between these, many ridges and valleys, falling down to Wâdy el Bîâr. The road was comparatively level, and after having passed the sixteenth kilometre stone we left it and went westwards, ascending the slope, and passing the top of the ridge at a height of about 3,138 feet; hence about 120 feet lower than the highest point of Râs es Sallah, or esh Sherifeh. We had Kh. Beit Skâria south-west beyond a very deep valley; its name was told me—Wâdy Abu Jor.

(B) *Khŭrbet Beit Skâria.*— I wished to go there and see, after 30 years, the place once more, so we descended the rocky slope and came to the Roman road going south-westwards; had then to leave it, and skirt the upper part or the beginning of the said valley, going westwards, and so came to the ruin, marked on the large map (Sheet XXI), north of Ballûtet el Yerzeh. The people call it Kenîseh, *i.e.*, the Church. I examined it carefully, but found no traces of an apse or other marks to stamp it as a church, except a few round pillars of about 2 feet diameter, and near the south-western end (inside the walls) a rock-hewn cistern. The ruin is now nothing more than the foundations of a former large square building, with roughly-hewn, comparatively large, very old-looking stones. Shrubs and a little grove of small trees are flourishing on it. It stands just on the saddle or the watershed of the two valleys—beginning here and skirting Khŭrbet Beit Skâria on its east and west sides. I think the ruin was once a strong castle (*see* "Memoirs," III, p. 35, and especially p. 108, where the ruin is mentioned and described). That the ruin had been a castle is proved, as seems to me, by the once fortified road going up from it northwards to the town, situated about 100 feet higher. On this road, which is elevated with side walls, are two remarkable rock-cut cisterns. The town was once of considerable extent; its walls are partly still traceable, and the positions of the gates can be fixed. In its south-eastern part stands now a mosque, with a court and front hall, as described in "Memoirs," p. 108. At the building of the porch, or rather when the steps leading down were made on the north side—the original ones were certainly on the west side—the two ancient pillars were used for a support of the roof. The door of the mosque I found open, but could not detect any mark to show it had once been a church. It is a very plain, square room of no great extent, having on the south side a plain mihrab without any decoration. The flooring is of concrete, and the roof a tunnel vault, not many years ago restored, as it had apparently fallen in. The top of the roof is flat (no dome), and has round about a parapet wall, and on its southern side are four marble relics, most likely found when the roof was rebuilt, as they are not

mentioned in the "Memoirs." They are about 3 feet long and about 8 inches thick, of a square shape, and have on two sides grooves, and on the other the old Jewish ornamentation[1]—circles and grooves laid out in thin stripes in a square or frame-like form—like those on the piers of the Golden Gate at Jerusalem. These stones have a round, conical top, and were once used as posts for partition walls. Many such marble stones have been found in and about Jerusalem, and some are even still in use. Those found at this mosque in Beit Skâria are now put on the top of the parapet wall of the roof, one at some distance from the other, and look like chimneys from a distance.

From the top of the mosque I saw the west side of the Sherifeh ridge, as a similar long unbroken steep slope having valleys on its east side like that east of Wâdy el Bîâr. The height of my position I found to be about 3,155 feet, hence more than 100 feet lower than Râs es Sallah. The khŭrbet, in which are many vaults still good, I found inhabited by people from Urtâs, who till the ground here and were then reaping the harvest. In the neighbourhood of Ballûtet el Yerzeh I found also a camp of Bedouin living in black tents. Into the question whether Beit Skâria was the house of Zacharias, the father of John the Baptist, I will not enter here, nor was I able to decide the question on the spot. So we left the place, again returning the same way, and on coming to the Roman road I saw on its side a stone standing upright and went there and found two more lying on the ground. They were once round pillars, but now very weather-worn and shapeless, and formed once not a mile-stone but a monument of some kind. Might it perhaps indicate the place where in the Maccabean time the Jews had the disaster with the Greeks? (1 Macc. 6, 32–48.)[2] I asked for the name of the place, and was told these stones have no proper name, but the *place* hereabout is called Kâât ez Zeitûneh (as given in the large map), and on my remark, Why so? there are no olive trees, the man said: But formerly there were olive trees here. We followed the Roman road northwards and saw nothing remarkable except that we passed an old lime-kiln and noted that the valley to the left (west) was very deep, and lower down the village Nehhalin. The road is in great disorder, and in many places only recognisable by the fallen side walls. Coming higher up the ascent was steep, so I could clearly see that the Romans laid out their roads from a military point of view, and not, as to-day, to avoid ascents and descents as much as possible. At once our guide branched off to the right (east), and after a short but very steep ascent we were on the top and on level ground of some extent. We then came to a heap of stones which the man declared to be Râs es Sallah.

(C) *The Râs es Sallah* (or also esh Sherifeh), that is to say the height of prayer or the place for divine service. The point is marked on the large map with o. R. meaning ruin (the southern). The ridge here is

[1] *See* "Ordnance Survey Jerusalem," Wilson, 1865, Plate XXIII, No. 2.

[2] "Tent Work," p. 144.

about 3,245 feet above the sea, and the ground rises a little northward, so we could not from here overlook the northern part, and could not see Bethlehem, the Mount of Olives, or Neby Samwîl, although the general view round about is magnificent; the Frank Mountain seemed quite near. When looking round I saw at once that this is the place of which Consul Finn says in his "Byways" (according to the *Quarterly Statement*, 1880, p. 105):—"On the mountain top is a large oval space which has been walled round, fragments of the enclosure are easily traceable, as also some broken columns, grey and weather beaten. This has every appearance of having been one of the many sun temples devoted to Baal by early Syrians. By temple I mean open air courts with central altar. A mound actually exists on the highest spot of elevation (this is the cairn of the Survey or 'Rujm Kabtân' mentioned in the *Quarterly Statement*, 1879, pp. 130 and 172) which may well have been the site of the altar." The court which I have mentioned Mr. Finn calls an oval enclosure—to me it gave the impression of round, but not knowing at the time that it was said to be oval I paid no special attention to the point, but walked round and found it 250 paces, or the whole circumference about 700 feet. If round, the diameter will be about 235 feet. The surrounding wall has never been high or massive. It was a wall and not a circle of single stones, put at the same distance one from the other like small Menhirs such as are found in the country beyond the Jordan, as, for instance, one I saw in Wâdy Waleh with stones more than a man's height. It was a low dry wall of rough and unhewn stones. The court had a large opening towards the north—towards the heap on the highest point—and the round court is quite level and consists of soft rock. On one place I observed even some paving. The stone heap in the middle is about 13 feet high. It consists of scattered somewhat large stones with no small ones between them. Inside or in the middle, instead of finding the top of the heap, one finds a kind of crater and remains of a round wall with a diameter of 13 to 14 feet, made of comparatively long and broad stones, and built without mortar. Owing to the size and shape of the stones they have not all fallen. Some of the corners fell inwards, so that without excavation one cannot see the flooring nor exactly the place of the former door, although I found some indications that it was towards the east. I think the building was once roofed by each layer of the stone circles being made narrower until it closed at the top. Of its original use and designation one can only make suggestion, and so Colonel Conder, in the *Quarterly Statement*, 1880, p. 106, footnote,[1] thinks it to have been a *lime-kiln*, but this is not so. Lime-kilns are always made near a road, or a place convenient to carry off the lime afterwards, and on places where the stone for them may be easily got without quarrying but picked up in the neighbourhood, and also the

[1] The description in the "Memoirs" (Sheet XVII), p. 2, Râs esh Sherifeh, and Khŭrbet Jami'a, p. 115, is a mixture of things, bringing in even Neby Daniâl, and Bakoosh, p. 86. "Name Lists," p. 323.

fuel not too far away. Here on the top of this high hill are no such stones, rather a stratum unfit (or much less fit) for burning lime than elsewhere, nor could at any time much fuel have been very near. To bring up there the stones from elsewhere, and when burnt to lime to carry them down again, I do not believe would be done. Lower down, as may be seen on the map, at the Roman road is really a lime kiln in a spot where the stones for it could be easily got. Further, in the inside of the lime-kiln *plants* of importance will never grow, but here in this ruin are everywhere roots and plants between the stones. Then, further, the sort of stones are not such as they are after burning of lime, but still in some *shape* and not varying much in size. I have also seen some of a red colour, and all were apparently brought there from some distance. As most probably there were never vineyards here, one cannot suggest it might have been a watch tower such as may be seen in the neighbourhood of Bethlehem.

A few hundred feet north, outside the circle, are some stone heaps of smaller shape, as if they had been once little houses, and going further northwards we came to several other stone heaps, larger and smaller, also to the *pillars* of which Mr. Finn speaks, which were very weather-worn and lying on the ground. One long stone was not a pillar. Going on in one minute we came to the Survey beacon, a stone heap similar to the first and built upon it a round conical stone pile about 10 feet high, with the heap itself towering 18 or 20 feet above the level ground, which is here narrow and not so broad as at the other place with the stone circle. This beacon the natives call "Râs Kantarah," head of the tunnel-vault, or also of the (stone) pile, whereas (as I have already stated) the other is called Râs es Sallah, and the whole *ridge* is called *Daher es Salah*. Râs esh Sherifeh, the celebrated or eminent height,[1] is simply another name for the whole ridge not so much used as Ras es Sallah. I asked the guide: "Why do you call this heap 'Râs Kantarah'? as there is no Kantarah or arching through which one can look." He said: "Formerly it was a kind of building, but there came Europeans, who destroyed it partly and built from the stones the pile you see before you, in order to look from the top through a glass to their own country, and that people there might see them here!" When I asked for the Rujm Salamè or that of Kabtân (*Quarterly Statement*, 1879, p. 172), he said he did not know anything of them, so it seems these names were simply used by the Survey party and never came in use by other people, or even if used at that time are now forgotten again. This heap is greater than the one with the circle, but has from the east an ascent, and on the west looks like a wall in a round line, and has no side opening. The stones are nearly of the same kind as those of the other; but those used in the *pile* are rather square shaped. If in ancient times this was the *altar* of the Sallah ridge—as Mr. Finn supposed—standing on the

[1] There we got already a view northwards and saw the Mount of Olives, a bit of Jerusalem, and Neby Samwîl, &c.

highest point, 3,258 feet above the sea, the smoke of the altar fire could be seen from very far round about, for there is a view rivalling that of the Mount of Olives, Neby Samwîl, &c., which places we could see, and also Bethlehem—but not Rachel's tomb. Although the ground is level round about, I could not see any trace of a former enclosure, nor of any village or hamlet of which Colonel Conder speaks (*Quarterly Statement*, 1879, p. 172, &c.). But a little less than a third of a mile northwards and a little descending we came to ruins which might be called a "hamlet." There are walls, once forming several rooms, connected with each other, of which the more southern one had once been a mosque, as it has on its south wall a mihrab, plain and without any ornamentation. It is called Neby Daniâl,[1] and so the whole ruin bears this name. But there is no longer any dome, or "Kubbeh," as one would expect when reading (the 14th line from above) on p. 172 in the *Quarterly Statement*, 1879. In the "Memoirs" I have not found it, except on p. 115, brought in connection with Khŭrbet el Jami'a, and in the "Name List," p. 323, the "Prophet Daniel." It is situated on a little sloping ground, only about 20 feet lower than the last or the highest point. Outside at the south-west corner is a *sink*, cut in the rock like a pool, but I could not see any traces of former cementing or masonry. According to the map and "Memoirs," I thought it to be the Khŭrbet el Jami'a, and having started going northwards till we met the Roman road again, the guide asked me: "Do you also wish to see the Khŭrbet el Jami'a?" I answered: "Of course; but have we not just now seen it?" He said: "No; this is called Neby Daniâl." So after going a little way along the Roman road he led me out of it, and in a right angle to the right hand going direct eastwards, without a path, first over empty barren ground, and then over some new cultivations. We came then to various old and new walls.[2] The new ones are boundary walls, made from stones taken out of the ground in planting vines, &c., and the old walls are the foundations of buildings, especially of a large square building which the guide called el Kenîseh, *i.e.*, the Church, one-third of a mile east of Daniâl, but situated, as I estimated, about 75 feet lower (or about 3,160). The inside of the building was choked with plants, but the walls are left, as the stones are large and difficult to move or take out of the ground. It may have been a church, although I could not be certain of it. A spring, only 750 feet distant from it, but below the steep rocky brow of the hill, is called 'Ain el Kŭssîs, the spring of the (Christian) priest, which is some proof of the ruins having been a church, the shapeless ruins of the place are lying eastwards, to a great extent, on the declining ground. These ruins are called Khŭrbet Jami'a, meaning the place where people come together. What the "Memoirs" say I have already quoted, and the "Name List," p. 306, translates it the "Ruin of the Mosque," which is also correct; but my guide

[1] "Name List," p. 323.

[2] The guide said: "This is Khŭrbet Jami'a."

told me "there is not any mosque; such a one is, as you have seen, at Neby Daniâl," so perhaps this name is not a modern, but an *ancient* one, where people first met when an offering was going on at the high place. (May Samuel's Naioth have been here?) We went back to the Roman road, and on it downwards to the point where it rises again; here we left it, and went down a steep and rocky path, winding zigzag through the vineyards to 'Ain Kŭssîs ("Name Lists," p. 280), just at the beginning of the valley mentioned above, called Wad bayn es Sakhrah. But we preferred not to go down on it to the pools, but went over to its north side, and along the slope and then through a shallow valley, always through vineyards over to the El Khŭdr plain, and round the foot of the Bakoosh Hill towards the Hebron-Jerusalem road and the pools. We met a man, who showed me some excavations recently made. He told me there was a kind of cave in the rock, and a priest of the convent had said, as this hill is called Bakoosh, he would find something by excavation. So he cleared out the cave, but nothing else but tombs and some bones were found. But cutting deeper into the rock, which is very soft, he found *water*, and so there is always a quantity of water. At the pools a carriage was waiting for me, as sitting so long on a donkey's back, and going over such rocky and uneven ground was more than enough for me, and so I came safely back to Jerusalem, much pleased with the results of my excursion.

4. *The result of this excursion* was for *me* the full conviction that in these mountains we have the land of Zuph[1] and Samuel's home, the Ramathaim-Zophim, in the various ruins, together with Naioth, the Bama, or "height," and even Sechu, and this I will briefly explain.

1. In the Daher es Salah, or Râs esh Sherifeh, we have the "height" spoken of in 1 Sam. ix, and the various things belonging to it a little lower down.

2. In the ruined places, Daniâl and Jami'a, the Naioth and place whereto the people came, when assembling, connected with which was the School of the Prophets, or a kind of convent. These places, it seems, were even esteemed in the Christian time, and therefore people speak of a Church—and also in the Moslem time, for they had there a mosque, although no people were residing in the neighbourhood—and even the name, Râs esh Sherifeh, besides that of Sallah, points to this.

3. Further down in the mountains was a double city, now the Khŭrbet of 'Alia and Bireh, as described above, in the "Name Lists," p. 301, translated the "upper ruin," but could as well be translated the "high situated ruin"; quite similar to what "Ramah" means. The other Khŭrbet Bireh, omitted by the Survey, means the ruin of, or with, a cistern,[2] indicating that 'Alia had none, or not many, and had to fetch

[1] In "Tent Work," p. 257, is said: "Ramathaim-Zophim means the Heights of the Views."

[2] It might also mean the fortified place = Bir, Bireh, like the one north-west of the Temple.

water from the neighbouring spring, *'Ain Saleh*, at the pools. And when we read (1 Sam. viii, 2), that the sons of Samuel were judges (of the people) in Beersheba, it cannot mean the city of this name in the south at the border of the country, but was certainly a place more in the middle of the country, and most probably this Bireh. There was no reason they should go away from their home, and from such an esteemed spot, which was at the time the religious and political centre. It is true, the second word, "sheba," is now missing—but this word signifies a place where treaties are made—and just such things the sons of Samuel had to do here, and hence it may at that time have been called by this name, which afterwards, when the place had fallen in ruin and become desolated, such business and also the name ceased and were forgotten, only the rest of the name, on account of the cisterns, remaining. As this city stood also on a height, and at least as high as the other, they together made up the two Ramahs, or the Ramathaim. That on these heights, and even on the Sherifeh, the lamenting of the mothers whose children were killed by Herod, "in Bethlehem and its neighbourhood," might have been heard, is not only possible but certain. I think, further, that as Beersheba is mentioned this indicates that, as Samuel had his house in Khŭrbet 'Alia and resided there, his sons wished to be a little out of his sight, and took up their abode in the other city, in "Bireh," but still within the boundary of Ramathaim-Zophim.

Further, when (1 Sam. xix, 18) David fled from Saul to Ramah under the protection of Samuel, the venerable prophet took him for more safety and more away from the eyes of the people higher up the mountain to Naioth, the Convent or the School of the Prophets, in which David might in some measure disappear and be separated from other people in a place in some degree holy. So that all the ambassadors of Saul when they came there were, under the influence of the ruling spirit there, so affected that they began to "prophesy," forgot all the business they had come for, and were not able to carry it out. And so it happened even with Saul himself. We read (1 Sam. xix, 22) that when he came to a great well, that is, in Sechu, he asked the people there: "Where are Samuel and David?" They answered without hesitation: "At Naioth in Ramah." Now, this "great well" (some translate it in German, "Grosse Grube") is nothing else than the original pool, if not the present Upper Pool, the pit to take the waters of 'Ain Saleh,[1] at the castle of "Solomon's Pools" of to-day. And Sechu is not a city—it is never mentioned elsewhere—but the arrangements for washing, watering animals, &c., huts for the guards, for passers by, and others. As at a spring or large well, situated on the road, there are found people, especially women fetching water, talking or washing their clothes, &c., so it was in Saul's time. When Saul was prophesying and in consequence lying on the ground at Naioth, David left the place and went to Jonathan (1 Sam. xx, 1), and

[1] Such reservoirs or pools are formed at every spring in this country, and so 'Ain Saleh must also have had one at the very place of the present Upper Pool.

made with him an agreement, and when Saul after his return was still disposed to kill David he left the country and went to the Philistines, and his further history has no bearing on the present question.

But about Saul's first journey I have also to say a few words, although there is already much written about it, and even I myself have given in the *Quarterly Statement*, 1883, p. 110, the views which I had at that time, but found afterwards to be wrong in several points, especially in the fixing of Ramah at Sôba on Robinson's authority.

When Saul came to the city—the name is not given, but most probably it was Samuel's home, or Ramah, identical, as I am fully pursuaded, with the present Khŭrbet 'Alia—Saul met Samuel in the gate (1 Sam. ix, 18), and the prophet sent him (with his servant) to go (before him) to the height (Bama), or offering place, situated higher up on the mountain ; the road led him to (the present) "Jami'a," where people came together, and where Saul found already other guests, and when Samuel came he took Saul and his servant with him into the "parlour" (v. 22), perhaps at the present Dâniâl? It was a separate place at any rate. When the offerings and the feast were over (v. 23) they went down from the high place into the city, and Saul stayed the night in Samuel's (own) house, sleeping on its roof. From this we see it was in summer time ; and rising early in the morning Saul left, the prophet conducting him out of the city, and as far as the point where the descent became steep, where Saul was anointed as king and, feeling the oil running down his cheeks, became quite another man. That all this was true, and from God, Samuel gave him some signs, which really came to pass as predicted during his journey home, and on the same day —not on the next, as some suppose.

5. *The Return in Saul's Journey.*—Saul was anointed on the edge of the hill south-west, above Solomon's Pools—not on the Bakoosh Hill—and had to go northwards and pass Rachel's sepulchre, which could not be seen from here, but that was not necessary. Saul very likely knew of its existence, and if not, Samuel told him he would pass it on his road home. 1 Sam. x, 2, says :—"Thou shalt find two men by Rachel's sepulchre in the border of Benjamin at Zelzah." Zelzah was apparently a place on the way[1] at which Saul would meet two men. But it is said he would meet them at Rachel's sepulchre—so both were one and the same, for how could Saul meet these men at two different places? This difficulty has had various explanations, or solutions. Some scholars put Rachel's tomb in another place, north of Jerusalem, where the boundary line of Benjamin went through, to have the monument in the land of Benjamin. Some think there were two monuments of Rachel ; the real one, near Bethlehem, and another as a memorial in the land of Benjamin —as the words "in the border of Benjamin" indicate, and hence different from the one in Judah. Although I held for a long time this idea and

[1] *Quarterly Statement*, 1880, p. 239.

advocated it in the *Quarterly Statement*, 1883, p. 110, I think it is too ingenious and not natural. I now believe rather that a strip or tract of land round the sepulchre of their ancestor's mother was allotted to the tribe of Benjamin, although situated within the land of Judah, and hence Saul could meet the two men in this special tract of land and very near the monument itself. In regard to Zelzah, some translate this word, not taking it as a *nomen proprium*, and give it, "shade of a rock," where the two men were sitting or jumping, *i.e.*, making gesticulations of joy when they saw Saul, to tell him that the asses were found, and give him news of his home, from whence they came. Such behaviour would have been quite natural—the Vulgate gave Zelzah with "Meridies"—this would fall in with my idea that the meeting took place a little south of Rachel's tomb, but already in this "border of Benjamin." All this may be correct, but still I think these two men were citizens of Zelzah, a town either in Ephraim, past Gibeah Saul, where they saw Saul's father and whence they intended to go to Ramah, or even Hebron, or identical with Zelah (Joshua xviii, 28, and 2 Sam. xxi, 14), in the very neighbourhood of Gibeah, or Saul's home. From Rachel's tomb, going further north, Saul came to the plain of Tabor, where he met three men. Others translate 'Oak (or a tree) Thabor'—the Vulgate 'Quercus'; the name Thabor suits also better for a *tree* than a plain, so I think the road over the Mar Elias Hill was at that time not existing, or not in common use, and Saul took that going through the shallow valley west of the hill Tantoor, coming out to Beit-Sŭfâfâ of to-day—and further to the holy tree, "Ballût el Bedrîyeh," or the Oak of Bedrîyeh[1]—which may be a descendant of the former Tabor Oak, as in general all these old holy trees became preserved through ages down to to-day. Here two roads are meeting. The three men most likely came by the other from the south-west—whereas Saul came from the south, and the meeting happened here. Intending to go up to Bethel they were walking together, at least for some distance. The nearest way for these three men was to leave Jerusalem at some distance on the east and go direct towards Beit Hannina and Bireh. If Jerusalem was the "Hill of God," mentioned in verse 5 as the next station for Saul, he had then to leave these men and to turn eastwards, and the Mount of Olives would be the "high place" from which the prophets came down; but if by the "Hill of God" and "Garrison of the Philistines" is meant Mizpah—the present Nebi Samwel—then Saul might have walked with these men as far as the brook of the Wâdy Beit Hannina, and then gone up towards Neby Samwîl —first to the city Beit Iksa—and meeting the prophets beyond. Into this question I will not go, but refer to the *Quarterly Statement*, 1875, p. 35; 1877, pp. 21, 104, 205; 1881, pp. 89, 91; 1882, pp. 264, 260–6; 1883, p. 101, and others. The rest of Saul's journey home—this was either Tell el Fûl, as some think, or Jeb'a, as others—both were nearly the same distance from the Mount of Olives, and Neby Samwîl.

[1] *See* large map and "Name Lists," p. 285.

6. *Some Remarks.*—I wish finally to remark that in travelling in the Holy Land many things, even when near, may very easily not be observed in passing through, and not going to and fro, and repeating the searchings again and again. So, for instance, the eminent traveller, Robinson, came on May 8th, 1852 (*see* later "Bibl. Researches," London, 1856, p. 284), over Râs esh Sherifeh, and did not observe any one of the places I have spoken of in this paper, and which the map shows, except Beit Skâria and El Khŭdr. I may also mention that El Khŭdr has in modern times very much increased, there are many new houses, forming a quarter larger than the old one, and the neighbourhood is much cultivated now.

At the castle of the pools a piece of the outer face of the southern wall has fallen down; if not repaired there will by and by fall more, and the wall will then get a breach. In the northern wall of the Middle Pool, near its eastern end, a hole is broken, so that the water may run out here at a much lower level than its usual overflow conduit hitherto did, and the aqueduct (carrying the water to Bethlehem and Jerusalem) is broken off there, and the water of the springs, especially that of 'Ain Saleh, runs out here, and people have now to come here to fetch water; the Upper Pool has no water at all, but its bottom is used as a vegetable garden.

ADONI-BEZEK'S CITY.

By Dr. C. Schick.

Very many names of cities mentioned in the Bible are identified with sites of the present day, but not all of them; so it is with Adoni's city, Bezek. Again, there are to-day many ruined places—of former towns, each bearing a name—which could hitherto not be identified with any Bible name and site—as, for instance, Kûfîn, situated on the road from Bethlehem to Hebron. When I recently made a visit to Hebron, this place, Kûfîn, and its neighbourhood aroused my attention, and the desire to know what this interesting site was in ancient times. So I made the necessary studies in all directions, and found it to have been the city of Adoni-Bezek, mentioned in the first chapter of Judges, which hitherto has not, as far as I know, been identified. This city, with its territory round about, was not conquered by Joshua, but after his death, by the tribes of Judah and Simeon. Now, as it is said (Joshua xi, 23): "So Joshua took the whole land . . . . and gave it for an inheritance unto Israel according to their divisions by their tribes; and the land rested from war"; people who like to find faults in the Bible call this a *contradiction*, but without proper reason, and not having looked fully into the matter. Joshua did take the country *in gross*, and could, as such, divide it and give the shares to the various tribes of Israel; although

there were still many places not conquered, and inhabited by Canaanites, which are mentioned repeatedly, and which places had to be in course of time conquered by the tribe in whose territory they were situated. For, according to Joshua xi, 19: "There was not a city that made peace with the children of Israel, save the Hivites of Gibeon; all other they took in battle." The chief and general conquering of the land is described in Joshua, chapters vi to xi, and in the twelfth all the captured kings are enumerated, with names according to their chief cities, 31 in number. From this some take the idea that those kings possessed each only *one* city; but this is an error. It may have been so with some, but most of them possessed several cities, besides many villages; for we find many names of cities which are not included in the 31, and, besides, that not all the chiefs or heads of cities, called kings, were captured, but several were in Joshua's time left unconquered, especially in the mountain districts—as, for instance, Shechem, and others like this Bezek of which we speak. Such cities doubtless became even more populous by refugees escaping to them from the cities besieged and conquered by the Israelites. That such unconquered cities were between Jerusalem and Hebron we see clearly from the narrative. Joshua, with the fighting men of Israel, came up to Ai and Bethel and Gibeon from Gilgal, near Jericho, and slew those five kings resisting him, following them down into the maritime plain to Azekah and Makkedah, and from there in the plain southwards to Libnah and Lachish. He then went on further south to Eglon, and, after having taken these cities, went eastwards up into the mountain to Hebron and Debir, and from there south and south-westwards to Kadesh-Barnea and Gaza, and, when they had taken all these cities, returned to Gilgal, the chief camping-place of the whole people, with women and children (Joshua x, 9–43). So we see that they did not come from Hebron northwards, towards Bethlehem and Jerusalem, and so some cities in this district were not molested, and escaped the fate of so many others.

Now, this district was included in the share allotted to the tribe of Judah, and so we read (Judges i, 3) that he said to Simeon his brother: "Come up with me into my lot, that we may fight against the Canaanites; and I likewise will go with thee into thy lot. So Simeon went with him. And Judah went up, and the Lord delivered the Canaanites and the Perizzites into their hand, and slew of them in Bezek ten thousand men." But Adoni, the chief of Bezek, fled; but they caught him and brought him to Jerusalem, where he died; and so the men of Judah took possession of this chief town Bezek and what belonged to it. Since Adoni, according to verse 7, had previously conquered 70 neighbouring chiefs of the people, his territory must have been of considerable extent; and although it may be allowed that some of those 70 cities had been already captured by Joshua, still there were probably left to him several cities and many villages besides his chief city, Bezek, which needs identification. I think we are on the safe side if we put it at the ruined place of Kûfîn, which is about midway between Bethlehem and Hebron.

As there is in 1 Sam. xi, 8, a town Bezek mentioned, where King Saul gathered his men of war against Nahash, the Ammonite king, some writers think it was the same place as the one we speak of. But this is certainly an error, for this was a city in the tribe of Issachar, in the north of the country, not far from Jabesh-Gilead, as the history plainly shows, and the one we speak of was in the south, in the tribe of Judah. It is true our Bezek is not mentioned in the list of the cities of the tribe of Judah in Joshua xv, 22–63, but the other Bezek is also not mentioned in the list of the cities of Issachar (Joshua xix, 17–23), nor in those of the neighbouring tribes. Another objection—that there would be between Bethlehem and Hebron no room for such an important place as Adoni-Bezek's was—has also no foundation, as there is just here room for such a place, and this is Kûfîn, with its surroundings. And one could hardly answer when asked, "If Kûfîn was not Bezek, what city was it?"

In modern times Robinson first visited this place in 1838, and called it then "Abu Fid," but wrongly, and he corrected this afterwards. The "Memoirs" of the Survey (III, p. 358) gives the following description :— "Khûrbet Kûfîn is a large double ruin, with foundations, heaps of stones, cisterns, a spring, a wine press, and tombs ; also a large birkeh. On the south side of the hill are about a dozen rock-cut tombs . . . a cave . . . . with niches like those in the caves at Beit Jibrin . . . . north of the birkeh is a sarcophagus . . . . a column shaft and several large stones lie near."[1] East of this, but near, and extending downwards on the slope of the hill, are other ruins of considerable extent, called Beit Z'ata, of which the "Memoirs" (p. 325) say :—"Walls, foundations, cisterns, and drafted masonry exist here. One branch of the Jerusalem aqueduct passes immediately to the south. Near the road are remains of a tower about 40 feet square, and east of this ruins of moderate ashlar, the walls about 5 feet thick. . . . . South of it is a rock-cut domed cistern. The tower is perhaps an old station on the main road." And on p. 312 Beit Z'ata is identified with Bezeth, where Bacchides pitched his tents and took it for the centre of his operations (1 Macc. vii, 19). Josephus calls it in "Antiq.," XII, x, 2, Bethzetho, so that one might think it to be that at Jerusalem, but the remark in the Maccabees—Bacchides moved away from Jerusalem—points to this Beit Z'ata near Kûfîn. After Jerusalem it was one of the most important places, so that Bacchides besieged it and left a force here for Alcimus.[2] Beit Z'ata is situated near but lower than Kûfîn itself. Beit Ummar to the west is also very near and situated still higher, which the "Memoirs" describe as follows (p. 303) :—"A small but conspicuous village standing on the watershed and visible from some distance on the north. An ancient road passes through it. Half a mile north-east is a good spring, 'Ain Kûfîn. The mosque has a small tower to it. . . . . This place seems

[1] All indicating a place of importance.

[2] The pool at Kûfîn may be the "great pit" where Bacchides cast the slain (1 Macc. vii, 19).

to be Bethamari of the Onomasticon. . . . . The mosque is dedicated to Neby Metta or St. Matthew."

These three places I consider to have been the old city of Bezek, of which the name is still preserved in the one (the lower) part, whereas the two others have a new name, Kûfîn, the middle and chief part from the double ruin. It is the dual and means the two Kuf in singular, Kûfîn in dual, and the third may have had even then a separate name as a valley divides them, and that we have here a proper site for an important and large town, and the most important in the neighbourhood, can be easily proved. To it belonged, as still to-day, the rich and fertile well-watered valley 'Arrûb, the biblical Aruboth (1 Kings iv, 10), the place of one of Solomon's Twelve officers. The "Memoirs" say of it, p. 301: "There is one valley which is especially well watered as its name implies, Wâdy 'Arrûb, from which the Jerusalem aqueducts are supplied. Running water was found in this valley forming a stream in October, 1874, and there was plenty of water in the springs and spring wells along its course. The water of all these springs is very good." In this valley itself are no ruins of a large town, but on its southern heights, in a more healthy position, was the large town Bezek as described above.

When we read in Judges i, 6, 7, that they cut off Adoni-Bezek's thumbs and his great toes and brought him to Jerusalem, where he died, some writers think they brought him there as to a Holy place, as afterwards David brought there the head of Goliath, and Saul, Agag the Amalekite king to Gilgal (1 Sam. xv, 9, 32), and this may be so, but I think it can also have come about in the ordinary way. When they had got possession of the most important place of Adoni-Bezek and had killed 10,000 and caught the king they pressed on northwards as far as Jerusalem, as also here was still a remnant of the Canaanites, and Adoni seeing all this died finally out of grief and of his four wounds, which most likely were not taken much care of. Jerusalem also became conquered, but as it was on the edge of the allotment of Judah the men remained not here but went back each one to the place he had already made for a home, or which he was preparing as such in the newly-conquered district, especially at Bezek and its neighbourhood near the fertile and well-watered valley 'Arrûb.

NOTES BY REV. J. E. HANAUER.

I.—The Skipping of the Mountains and Little Hills (Psalm cxiv, 4 and 6, &c.).

I would take the liberty of calling attention to the following curious story, which I translate from the German of Stephen Schultz, a German missionary who was in this country in 1754–55. He tells it in order to explain and illustrate Psalm cxiv, 4–6. I trust that it will be not only interesting to your readers, but that perhaps one of them will be able to mention some passage in one or the other books of travels in the East alluding to the remarkable custom Schultz speaks of, but which I have never read of elsewhere or heard mentioned. It seems to have died out altogether :—

"*September* 21*st*, 1775.—This is a parable (Gleichnissrede), but to what it referred was hitherto unknown to me, because that in Europe such skipping and dancing of sheep is not seen, so that a similitude (Gleichniss) could be taken from it. However, when I was amongst the Arabs in the plain of Esdraelon last May, I saw such dancing . . . . I came . . . . from Nazareth and wanted to go to the place of Mount Carmel where Elijah performed his remarkable sacrifice. On the way I reached a camp of Arabs, whose prince (Fürst) is named Reschied. He happened to be away, but a relation of his was in the camp. My travelling party consisted, besides the Armenian and Greek servants, of some citizens of Nazareth ; of Herr Johannes van Kerchem, of Amsterdam ; of young Mr. Usgate, the eldest son of the English Consul at Ptolemais ; of Herr Francesco, of Avignon ; and a student from Aleppo. Now, because young Mr. Usgate was known to these Arabs, seeing that they were good friends of his father, we went to them and stopped at a hut, or large tent. The people at once surrounded us, helped us to dismount from our horses, took them to pasture, and led us into the dwelling, where we were entertained with food, coffee, and other refreshments. Now they took us to be persons of rank, and, as I heard afterwards, they considered us to be princes, because we had the eldest son of the Consul as our leader. He at other times had only escorted 'mylords' who had come from England, and therefore they tried to show us all the honour they could. In consequence of this their joyful music (Freudenmusik) was performed at the close of the meal. It consisted of singing, and of the women clattering their tongues in their tents"—(Schultz evidently means the well-known and shrill female "zaghareet," زغاريت)—"(for Arab women do not live in the same tents with the men, but have theirs apart, though close to the men's). This rattling with the tongue is so pretty and so loud that it can be heard very far off. They, however, only do so at times when their lord makes a great feast, and also when a prince or basha, who is either the lord of their country (Landesherr) or

who shows himself friendly to their own prince, comes past. Besides this shouting for joy in the women's tent, the sheep are led through the tent. It was done in the following manner :—The shepherd went on in front, and had a shepherd's pipe upon which he played, and the flock followed him ; and as the shepherd governed (modulated) the tone whilst piping by raising, lowering, or letting it run fast or slowly, the sheep made the same movements, and as accurately as a French dancer would do whilst following a minuet. When one shepherd had passed in such a manner with his sheep, another followed with his flock, and so one after the other, during which progress the skipping of the lambs and he-goats (Böcke) drew special attention (ein besonderes Aufsehen machte). Not all the shepherds had flutes, but some of them had other musical instruments. The dance of the sheep, he-goats, and lambs being ended, the camels came. They, however, had not to dance through the hut, but round about it. Whilst this skipping of the animals was going on the tongue-rattling (Zungenklappern) of the women was often heard. Now I come to the application of this to the text. This dancing of the sheep, he-goats, and lambs is, nowadays, only still in vogue amongst the Bedouin. Bedouin is the name by which they are known who live and believe according to the old customs. To them belonged the old patriarchs who are mentioned in Holy Scripture. Now, in David's time these old customs had not become so obsolete as they are now, when they are only still found amongst tent-dwellers ('Skeniten'), or Bedouin. Therefore, when this 114th Psalm used to be sung in the congregation of Israel, the parable (or the metaphor) of the dancing of the lambs was well-known to them, and even little children amongst them knew what it meant. The custom was, therefore, and is, as has been remarked, still amongst the Bedouin, that if a great lord passed by a cry of joy and congratulation (ein Freuden und Glueckwuenschungsgeschrei) was made. Further, if anyone made a feast the lambs skipped and the sheep danced. Therefore, when the Psalm says, 'The mountains skipped (danced) like rams, and the hills like lambs,' it is meant to indicate the presence of the Lord of all lords, who prepares a feast, &c. . . . . The mountains are Sinai, Horeb, Carmel, Pisgah, and Lebanon. The parable, however, advances *a minori ad majus*, namely, when a prince passes by it is possible for the lambs to be moved to dancing, but the mountains remain unmoved. When, however, the Prince ('Herzog' = dux, or army leader) of Life advances leading on His people, then the most firmly founded mountains shall be moved and testify their joy, &c., &c." (Schultz, 7^tes^ Stück, pp. 134–38).

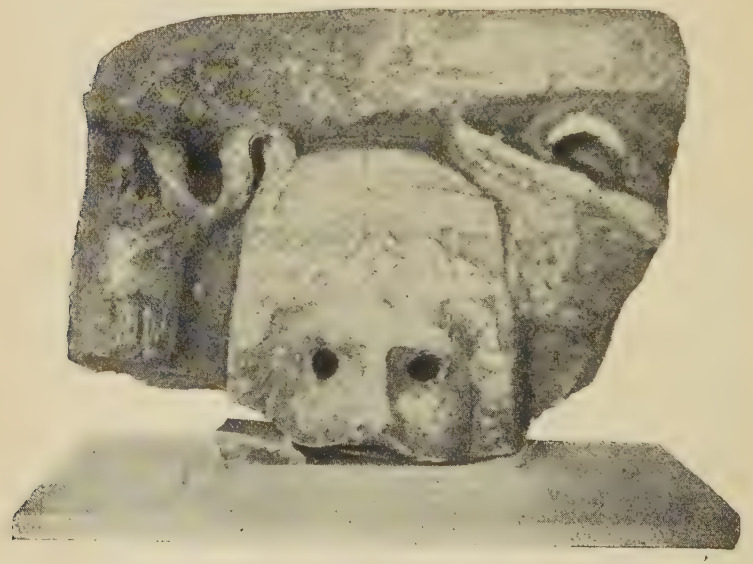
This account of a custom which was already dying out in Schultz's time would be very interesting and valuable *if it could in any way be verified*. His narrative of travel is in other respects so prolix and sober that it does not seem as if in this case the prosaic traveller had let his imagination run away with him. That at the present day wandering Arabs teach single goats various tricks, such as climbing to the top of a series of thin wooden cylinders piled one upon the other to the height

of several feet, and balancing themselves there to the music of a shepherd's pipe, is well-known. I have seen such performances, but I have never heard of whole flocks of sheep, and even camels, being taught to keep step to Arab music. The tale reminds one of Münchhaussen's dancing horse.

Richard Usgate was, according to Schultz, Consul—perhaps only Consular Agent—for England, Germany, Holland, Venice, and Ragusa in 1774–75. Are any journals of his known to be extant—in MSS., perhaps—and do they throw any light upon Eastern customs during the eighteenth century?

II.—Sculptured Stones from Na'aneh.

I have forwarded you photographs of two sculptured stones said to have been dug up about a couple of years ago at Na'aneh (the Naamah of Joshua xv, 41), a little village on the railway line some miles north of



Sculptured Head from Na'aneh.

Ekron. One of these sculptures is that of a lion crouching in a niche, and is cut in a block of limestone 0·70 metre long, 0·64 metre broad, and 0·18 metre thick. The carving is in bold relief and 0·65 metre long and 0·40 metre high. The crouching animal is remarkable for its great staring, lynx-like eyes, and a curious fringed collar round its neck.

The other sculpture is that of a grotesque head or mask, carved on one side of a marble slab, 20 inches long by 15 inches on the sculptured side. The eye-sockets are empty, and seem to have at one time contained

glass or porcelain eyeballs. A band or fillet runs across the forehead, from the right side of which what is perhaps intended to represent a veil floats in snake-like curves to what seems to be the capital of a pillar. The hair is for the most part arranged on either side of the grave matron-like face in a manner which, together with the fillet, reminds one of the headdresses of married fellah women from the Bireh district. Some of the hair, however, on the left side has escaped from the confining band, and the curls take the form of a wing or of the feather-like cirrus clouds one so often sees in the sky. Above them is a semi-circular loop or arch which, it has been suggested, is meant to represent the ear of the deity open to the prayers of her votaries. The mouth was originally open like the slit in a letter box and, I am told, was perhaps intended to receive written petitions, &c., to the goddess. I was inclined to think that this carved stone originally formed part of a frieze or cornice, and that through the open mouth, the lower lip of which, together with the chin, is missing, there once came a rain-spout, but Baron von Ustinov, in whose collection it now is, thinks it may have belonged to a statue of Cybele, whose images were sometimes furnished with glass or crystal eyeballs. She is, however, generally represented in ancient art as wearing a mural crown. On the other hand, "lions usually appear crouching on the right and left of her throne" (Smith's "Dictionary of Roman and Greek Mythology,"—article 'Rhea = *Cybele*,' p. 649, vol. iii). This might explain the sculptured lion above described.

III.

In Baron von Ustinov's garden there is a large and well-cut sarcophagus which was found at Kefr Saba (Antipatris (?)) a few years ago. The material is very hard *mizzeh* limestone, almost marble, and rings when struck. The lid has not been found. There is no inscription whatever, but one side bears carving in rather high relief, projecting about half an inch from the rest of the surface. It is in three panels or divisions. Only that on the left hand is at all remarkable, as it represents a vessel, vase, or urn with handles, and surrounded by a mass of heart-shaped leaves and tendrils, perhaps intended to represent ivy. The baron tells me that this sarcophagus is very much like one discovered by De Saulcy in the Tombs of the Kings at Jerusalem, and placed in the Louvre. Though not as richly carved as the supposed sarcophagus of Mariamne, found in the remarkable tombs discovered by Nicoparieh at Jerusalem a few years ago, it is of much better and more durable material (*see* illustrations on p. 120 of the *Quarterly Statement* for 1892, and Dr. Schick's letter on p. 185 of the same volume). Baron von Ustinov thinks that the Kefr Saba sarcophagus may have been that of Antipater, the father of Herod the Great (Josephus, "Antiq.," xvi, 5). However this may be, it struck me that you might like a note on the subject, and I therefore obtained the owner's kind permission to take the sketch and measurements. I shall also send a squeeze if possible.

The simple ornament sculptured on the right hand side, though not so striking as that of the leaf-encircled vase or urn at the opposite end of the one carved side of the stone coffin is, perhaps, more important, as it may help to fix the period during which the sarcophagus was made, The ornament in question consists of a double cross, or flower, formed by eight leaves *of the same kind* as those carved round the very tip of Absalom's Pillar, just over the small cable-moulding, and also on the capitals dug up at "the Tombs of the Kings," at Jerusalem some years ago, and which belonged to the columns that once adorned the portico or

façade of Helena's monument. Though the arrangement of these leaves is different here (being carved on a flat surface, in plan, instead of upright on a rounded surface), yet their presence seems to prove that the Kefr Saba sarcophagus belonged to the same age as the two above-named monuments. The stone has been dressed with the comb-pick.

IV.—Tell er Roos.

Just south-west of the American-German colony is an orange garden belonging to the family of the late German Consul Murad, and marked on Herr Sandel's map by the name of Biyaret, "Tell er Roos" (orange garden with water-wheel of "the mound of heads"). It is well known by this name, which is derived from a small mound, now walled on two sides so as to form a terrace, about 40 paces = 120 feet in diameter. The local tradition is that it was the scene of a massacre that took place a century ago. Cannon balls, fragments of iron bombs, and the broken pieces of a very large gun are still lying about. Mr. Dickie very kindly consented to accompany me to the spot, and he agrees with me in thinking that this shattered piece of ordnance could very well have been described, when entire, as being 16 feet long. I am therefore inclined to believe that it may be the same piece of artillery which the Mameluke leader, Mohammed Bey Abu-Dahab, had dragged here a hundred years ago, and all the way from Suez, in order to form part of his battery of eight guns commanded by the English adventurer Robinson. That gun is described by Volney as 16 feet long. Herr Georg Murad, a nephew of the late Consul, told me that when the land was levelled and a house built on the northern side of the mound some years ago, an enormous number of human skulls were dug up, and that even now, when fresh trees are

planted, many are often turned up. His father had told him that he had tried hard to get documentary proof that the traditional massacre of Christians by Abu-Dahab really did take place, and at Tell er Roos, but had only found a short notice of the event having occurred on a small hill near Jaffa. This notice was in an Armenian book in the Armenian Convent.[1] Herr Georg Murad was pleased when I placed in his hands the first volume of "Volney's Travels" (London, 1787), giving (ch. viii, p. 115 ; ch. ix, pp. 145–150) a full account of the Mameluke siege of Jaffa during six weeks, ending in an indiscriminate slaughter of men, women, and children, to the number of above 1,200, and also of the erection by Abu-Dahab of a pyramid formed of the heads of his victims. This catastrophe took place, according to Volney, on May 19th, 1766. Herr Georg Murad tells me that in memory of this terrible event, and in order to mark the spot, he thinks of placing a monument on Tell er Roos. This structure will have placed upon it, besides the broken cannon, bombs, and cannon balls, an appropriate inscription giving an account of the disaster, of which—an allusion in Murray's excepted—the ordinary guide-books make no mention.

THE BRIDGE AND CAVE OF BENÂT Y'AKÛB.

By the Rev. B. Z. Friedmann.

The Rev. B. Z. Friedmann writes from Safed :—

I am very sorry to have delayed so long in sending you the information you wished respecting the Jisr and Mŭghâret Benât Y'akûb.

Some years ago I made the acquaintance of a Maronite priest, Houri Jacob, a very well-informed man, and it was from him I heard the origin of the name which I repeated to Dr. Chaplin during his visit last year. I did not like to trust entirely to my memory, and found great difficulty in obtaining Houri Jacob's address.

Fortunately, however, I met him accidentally in Haifa last week, and am very glad to forward you the information I received from him. It may require confirmation, but seems a much more reasonable explanation than the Mohammedan tradition.

[1] Since writing this, I have found a literal translation of this notice into German in the Zeitschrift of the German "Palästina Verein," Bd. III, Heft 1, p. 49. Rendered into English it reads as follows :—"In the year 1775, Mehemed Abu Dahab came out of Egypt to Jaffa and pitched his camp upon a hill in the neighbourhood of the town of Jaffa. From this place he besieged the city. On May 27th (June 8th, new style), on a Sunday, he stormed, took, and plundered the city, and led all the male Christians he found to his camp. There he had them beheaded, and caused a hill to be erected of their heads. The reporter has seen this hill with his own eyes."

The Mohammedan tradition is that when Jacob returned from Mesopotamia to Palestine with his sons and daughters (the Mohammedans follow the Talmudical tradition that Jacob had many daughters), he crossed the Jordan by this bridge and proceeded to Safed. While his sons were tending their flocks by Jub Yusef he settled with his daughters in a cave situated at the foot of the Castle Hill, a little to the north of the present Seraiah, and overlooking the road to Damascus. The news of Joseph's death was brought to him there by his sons, and he and his daughters wept so much that the holes in the rock made by their tears are shown at this present day. This cave, like the bridge, bears the name of Mŭghâret Benât Y'akûb—Cave of the Daughters of Jacob. On this cave a mosque has been erected, and the spot is held so sacred that only Mohammedans are allowed to enter unless by special favour.

The following is the explanation given by Houri Jacob :—

At the southern end of Safed, not far from the Seraiah, there is a mosque called Jami'a el Ahmar, or the "Red," which in Crusading times was a church dedicated to St. James. Close by was a nunnery called by the same name. One of the French kings repaired the Jisr Benât Y'akûb, and the tolls paid by travellers crossing it went for the maintenance of the Nunnery of St. James. Salim Khalit Ashraf (?), King of Egypt and Damascus, besieged Safed and burned the church, the white stones of which turned red by the fire. The Crusaders' army took possession of the castle at Safed, and the nuns left the Nunnery in order to seek safety there, but finding the enemy had surrounded it, they took refuge in the above-mentioned cave. They were, however, discovered by their terrible foes, who after barbarous ill-treatment massacred them. This has given rise to the Mohammedan fable of Mŭghâret Benât Y'akûb as well as that of the Jisr Benât Y'akûb. In both cases the nuns of St. James the Apostle have been confounded with the daughters of Jacob the Patriarch.

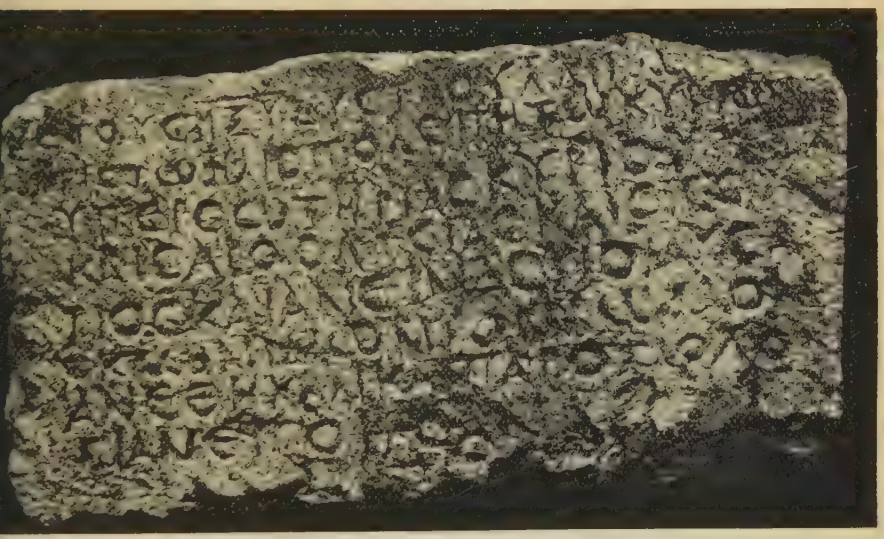
From the same source I heard that west of Safed, on the Jermuk Mountain, are ruins called Gabtu, about half an hour distant from the village of Semû'aieh, which was the dwelling-place of Tobiah (Apocrypha).

Near Sasa, another village on Mount Jermuk, is Katmûn, the birthplace of Anna the prophetess (Luke ii, 36). In the time of the Crusaders there was a church there dedicated to her.

GREEK INSCRIPTION FROM WÂDY BARADA.

By Professor H. Porter.

I send a copy of an inscription found by Dr. Moore, of the Syrian Protestant College, in an old mill in the Wâdy Barada, in Anti-Lebanon, through which the road passes from Damascus to Baalbek, the ancient Heliopolis, to which reference is made in the inscription. Dr. Moore took a photograph of the stone, a copy of which I enclose. The inscription may have been previously published, but I have not seen it :—



ЄΤΟΥCH̄Ξ̄ΥΔΥCΤΡΟΥΛΔΙΙ(Υ
Ψ)ΙCΤΩΗΛΙΟΠΟΛΕΙΤΗΤΩΚΥΡΙΩ
ΥΠΕΡCΩΤΗΡΙΑCΚΥΡΙΟΥ
ΚΑΙCΑΡΟCΛΥCΙΑCΚΑΙCΠΟΥ
ΡΙΟCΚΑΙΑΝΕΙΝΑCΥΙΟΙΛΥC(ΙΟΥ)
ΕΚΤΩΝΙΔΙΩΝΤΟΝΒΩΜΟ(Ν)
ΑΝΕΘΗΚΑΝΚΑΙΠΑΡΟΜΟ͞ΛΟ
ΓΙΑΝΕΠΟ(Ι)ΗCΑΝ

Ετους ηξυ δύστρου λ Διὶ (ὑψ)ίστῳ Ἡλιοπολειτ(ῶ)ν τῷ κυρίῳ, ὑπὲρ σωτηρίας κυρίου Καίσαρος, Λυσίας καὶ Σπούριος καὶ Ἀνείνας υἱοὶ Λυσί(ου) ἐκ τῶν ἰδίων τὸν βωμὸ(ν) ἀνεθήκαν καὶ παρ᾽ ὁμολογίαν ἐπο(ί)ησαν

Year 468, March 30. Lysias and Spurius and Aeinas, the sons of Lysias, have at their own cost and by agreement made and dedicated this altar to the most high God, the Lord of the Heliopolitans, for the safety of the Emperor, their lord.

The date is probably that of the Seleucid era, and corresponds to A.D. 155, in the reign of the Antonines.

Syrian Protestant College,
Beirût, Syria, *November 19th*, 1897.

[In the volume of *Quarterly Statement* for 1885, p. 17, with plate, are given eight Greek inscriptions from Wâdy Barada, copied in 1873 by Colonel Conder and the Rev. W. Wright, but the present inscription is not among them, nor have I been able to trace any previous publication of it.

The name of *Zeus Hypsistos*, as that of the deity to whom the altar is here dedicated, appears to have been the name adopted by Jews as the equivalent of Jehovah. An interesting memoir on this subject has recently been published by Professor Franz Cumont in the supplement to the "Revue de l'Instruction publique en Belgique, 1897," developing a view of Emil Schürer, the historian of Judaism; but the only inscriptions given there from Syria are two from Beyrouth. The others are mostly from Asia Minor, and are explained in connection with certain evidence concerning religious associations for the worship of that deity. —A. S. M.]

ANCIENT SARCOPHAGUS LID AT PELLA.

By Rev. J. E. H. Thomson, D.D.

At Pella I saw the lid of a sarcophagus lying on the ground between the modern village and the ruins of the old Basilica. It was not flat, but

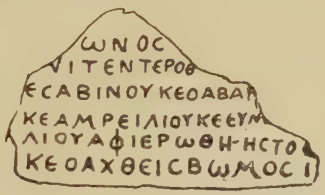
sloping slightly. It is of black basalt, and the only ornamentation was three circles in relief and an inscription, consisting of a single name and a monogram. I subjoin sketch of the slab.

I do not know what the monogram stands for. Is it a date? ΘΩΜΑC is a Hellenic Hebrew name, and may be Christian. That there is no cross is not against this, as, if it were first century, the cross had not become the sign of the Christian religion at that time.

GREEK INSCRIPTION FROM JERASH.

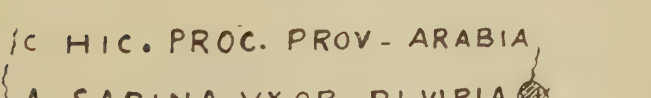
By Rev. J. E. H. Thomson, D.D.

On October 10th I was in Jerash, and saw the enclosed inscriptions with several others. I do not attempt to give an exact portraiture of the stones, but have endeavoured to render accurately the form of the letters. The first seems interesting, from the peculiar use of κ ε for τ ε, possibly the result of the Latin *que*. We found the stone newly unearthed, probably by some people seeking for tear-bottles. It was nearly directly south of the Propylæum. You may have already got it; if so, there is no harm done. The Latin inscription was on a newly-unearthed tomb-stone, and is interesting as Latin.



The Greek Inscription.

Near this was another fragment, which at first sight seemed to have broken from the above, but I could not piece it into it.



(The last letters damaged.)

The Latin Inscription.

Might the *Sabina* here named be the daughter of the *Sabinus* of the Greek inscription?

Note on the Greek Inscription from Jerash by A. S. M.

ἐκ προνοίας]
Φρόντ]ωνος . . . . . .
τῶ]ν πέντε, Ρούφ[ου . . . . .
κ]ὲ Σαβίνου κὲ Σαβαρ[ου
κὲ Ἀμρειλίου κὲ Εὐμ. . . .
λιόυ ἀφιερώθη κὲ τὸ [ἱερὸν
κὲ ὁ ἀχθεὶς βωμός

"By the care of Phronto and the Five, Rufus, Sabinus, Severus (?), Amreilius and Eumelius (?) were dedicated both the [temple] and the . . . . altar." I think the restoration of the name of Phronto in the first line is justified by a comparison of the inscription from Bostra, in "Waddington," No. 1907, where it is again associated with the names Sabinus and Amreilius.

In that inscription he has the title of Legate, and is concerned in the erection of an altar. The present inscription concerns a temple, apparently, as well as an altar. The phrase ὁ ἀχθεὶς βωμός is new to me, and I do not venture on a translation of it.

Waddington assigns the Phronto of his inscription to the second century A.D., but I suppose that the use of κὲ = καὶ in ours indicates a much later date.

If I am right in my reading of the second line, the five names which follow would represent a board of *quinqueviri*.

GREEK INSCRIPTION ON AN ALTAR IN THE GARDEN OF MENTOR MOTT, ESQ., BEYROUTH, FOUND AT BEIT-MERI, LEBANON.

Κυρίῳ γενναίῳ Βαλμαρκῶδιτ ᾧ καὶ Μήγριν κατὰ κέλευσιν θεοῦ Ἀρεμθήνου
Μάξιμος ἐυχαριστῶς ἀνέθηκα.

"To the great god Baal Marcod, called also Megrin, I, Maximus, have gladly erected this in obedience to the command of the god Aremthenos."

The above inscription from Mr. Mott's garden has already been published in M. Clermont-Ganneau's "Receuil d'Archéologie Orientale," 1886, p. 95, but as many readers of the *Quarterly Statement* may not see the "Receuil," the inscription is reproduced here.

Waddington (Nos. 1855–1857) gives three inscriptions from this same locality in which the name of Baal Marcod occurs. But I have not found

another instance of his alternative name "Megrin." The god Aremthenos is unknown to me.

A. S. Murray.

P.S.—With reference to M. Clermont-Ganneau's note in the October *Quarterly Statement* (p. 306), I am sorry not to have been aware that he had already published the Greek inscription in question, and had explained the words at the beginning of the fourth line in doubtless the right way. Otherwise the inscription deserved to be republished because of the improved text supplied by Dr. Porter. I see that M. Clermont-Ganneau had corrected *εἰς ὁμουσίην* into *εἰς ὃν οὐσίην* unnecessarily, if I am right in supposing that the word *homousia* (identity of nature) is here used of the ordinary relation of father to son, with no reference to its theological sense.

ROMAN REMAINS FOUND ON THE ANGLICAN COLLEGE GROUND, JERUSALEM.

By George Jeffery, Esq., Architect.

The following photograph of an inscription is taken from a gravestone, dug up in the progress of the works at the new Anglican College. It was found precisely in front of the entrance of the Bishop's house, in the cloister quad. The inscription, a remarkably fine and well preserved example, is as follows :—

A stone chest, presumably belonging to the inscription, was found with the seal. It was very much broken, in fact in fragments, but there were human remains still inside.

The Fretensian, or Tenth Legion, was in garrison at Jerusalem during the reign of the Emperor Hadrian. The place where the tomb was found is just outside the old city gate of that period. These very interesting remains will be the chief ornament of the small museum which is being formed for the new Anglican College.

THE TAKING OF JERUSALEM BY THE PERSIANS. A.D. 614.

By Prof. Ch. Clermont-Ganneau, LL.D.

Translated by permission from his "Recueil d'Archéologie Orientale," T. II, p. 137, livraison 9, Mars 1897 (Librairie Leroux).

I.

M. Couret's first work,[1] published some years ago, was a very carefully written account of the history of Palestine during the Byzantine period. He has now just finished an interesting study of the capture of Jerusalem by the Persians in 614.[2] In his former essay he summarised the story of the Persian invasion of Palestine in a few pages, taken from the only sources then known, that is to say, the scanty and ambiguous notices of the Byzantine chronicles,[3] and the annals of Eutychius, otherwise known as Sa'îd Ibn el Batrîk.

At the present day M. Couret resumes the discussion of this question, relying upon fresh evidence which he has gathered from two MSS. in the Bibliothèque Nationale, consisting first of two elegiac or anacreontic odes written in Greek by Sophronius,[4] the Patriarch of Jerusalem, a contemporary of the siege, and secondly, of a curious story in Arabic, which is probably a translation from the Greek.

The truth is that Sophronius's verses, which have already been published by Messrs. Ehrard and Studemund,[5] do not give us much information, and do more credit to the Patriarch's feelings than to his talents as a historian. One page of good plain prose would have been of more use to us than all this second-rate and tearful lamentation. The chief point of interest in it is that it proves that there can only have been one siege of Jerusalem, and not two successive sieges, as had been conjectured from the Armenian chronicle of Sépêos.

While dealing with this subject of the siege, I shall make a remark upon a matter of detail, an inference which M. Couret has thought might be drawn from a passage in Sophronius's elegy.

[1] Couret, "La Palestine sous les Empereurs grecs (A.D. 326-636)," 1869.

[2] Couret, "La prise de Jérusalem par les Perses en 614." Orléans, Herluison, 1896.

[3] To these we must now add the Armenian Chronicle of Sépêos, which was not then accessible to M. Couret.

[4] Sophronius died in 639, and consequently saw also that second tragedy, which, though less bloody, produced more important historical results—the taking of Jerusalem by the Arabs.

[5] "Programm des Katholischen Gymnasiums an St. Stephan," 1886-87, Strasburg.

In his paraphrase of verses 80–83 he says (p. 10) :—"To capture the place (Jerusalem) the besiegers had to make use of warlike engines, and, what is more unusual, to make the stones of the rampart crumble by enormous wood fires piled up at the foot of the wall, whereby they calcined the courses of stone and caused them to crack."

M. Couret does not seem to clearly understand this method of attack upon a fortified place, which was commonly practised both in ancient and in mediæval times, and is here distinctly described in a few words by Sophronius :—"*Ὑποθεὶς δε πάντα τείχει φλόγα.*" What is meant are true mining operations, consisting of galleries dug by the besiegers underneath the foundations of the city walls ; these galleries were supported by scaffolds of woodwork, which were set on fire at a given moment in order to bring about the fall of the wall above them. When the breach was thus formed the assault was delivered.[1] I find a corroboration of my conjecture in the Armenian chronicle of Thomas Ardzrouni,[2] who records that the Persian general "undermined the walls of Jerusalem and so brought them down."

Before I begin to discuss the third document, the real subject of this essay, I must be allowed to point out two facts connected with the Persian invasion. These facts seem to have escaped the notice both of M. Couret, who, as a rule, is so well informed, and of his predecessors.

The first is a piece of evidence, interesting from several points of view, which I have found in a document whose origin seems of itself to give it considerable importance. It is a synodical letter on image worship, written by the Fathers who attended a Council held at Jerusalem in 836.[3]

In this letter mention is made of great mosaic paintings which adorned the *external façade*[4] of the Basilica of the Nativity at Bethlehem, which represented, among other subjects, the Adoration of the Magi. We learn from the letter that the Persian invaders recognised their national costume in the dresses worn by the Three Kings, and consequently spared the Basilica. This unknown incident has both an

[1] *See*, in the Arabic document which I shall quote hereafter, a distinct account of the breach made in the city wall of Jerusalem by the Persians. One of the most interesting descriptions of this warfare by mining is that given by the Emir Usama, in his description of the siege of Kafar Tab (ed. H. Derenbourg, p. 101). He describes it as an eye-witness. It is noteworthy that the corps of Mussulman sappers who conducted the operation belonged to the Khorassan contingent ; we may conjecture that this corps inherited the ancient traditions of the Sassanides in military engineering.

[2] Dulaurier, "Recherches sur la chronologie Arménienne," i, p. 221.

[3] *Ἐπιστολὴ συνοδική*, edited by Sakkelion, p. 30 (Athens, 1874).

[4] According to Eutychius ("Annals," vol. ii, p. 299), the other mosaics in the *interior* of the Basilica, which were respected by the Persians, were to be seen down to the time of the capture of Jerusalem by Omar. But in his time the Mussulmans forgot the pledges which Omar had given to the Christians, and obliterated these mosaics.

archæological and a historical importance. As we have seen, it is the external mosaics which are meant, not the great mosaics which are to be seen at this day within the Basilica at Bethlehem, which only date from the reign of the Emperor Manuel Commenus (1143–1180). This *external* mosaic decoration may perhaps be assigned to Justinian's restoration. It was quite in the style of that period. The Arabs had remained true to this artistic tradition in the seventh century, when they had the exterior surfaces of the Mosque of Omar decorated by the Byzantine mosaic workers whom they had at their disposal. In 1874 I discovered notable traces of this original external decoration, whose existence had never before been suspected, and which has been at a much later period replaced by the beautiful porcelain casing which we see at this day.[1]

I have obtained my second facts from a Mussulman chronicler. The Arab historian, Tabari,[2] tells us of an amusing, although perhaps legendary, incident connected with the capture of the True Cross by the Persians. I do not remember to have seen this story quoted in any other place. When the siege began the Cross was put into a golden coffer (*Tâbût*) and buried in a garden. The better to conceal the spot where it was hidden, it occurred to them to plant vegetables over it. The Persian general discovered the truth at last by putting his prisoners to the torture, and it was with his own hand that he dug up the precious relic, which he immediately sent to his master, the King of Persia.

II.

The third document which M. Couret lays before us is, to all appearance, of far wider application than Sophronius's poems. It is written in Arabic from christian sources, and gives a detailed account of the conquest of Palestine and the taking of Jerusalem by the Persians. This fragment, which is to be found in a MS. in the Bibliothèque Nationale,[3] had already been cursorily noticed in the "Inventaire des manuscrits relatifs à l'Orient latin."[4] It is part of a collection of various short religious works, which have obviously been translated into Arabic from the Greek. The work in question must have had the same origin. At all events the translator is supposed to have been a monk of the convent of St. Saba, who, if he was not a witness and a victim of the siege must yet have been admirably well placed for learning the truth about it. Among a mass of tiresome declamation and groundless assertion one finds a number of topographical details which show at any rate that the writer had a thorough knowledge of the plans described. This part is what forms the chief value of the work, and it deserves to be carefully studied.

[1] *See* my Reports in the Palestine Exploration Fund *Quarterly Statement*, 1874, pp. 153, 262.

[2] Tabari, "Annals," series ii, vol. i, p. 102 (*cf.* Noeldeke, "Geschichte der Perser," p. 291).

[3] "Catalogue du fonds arabe," No. 262, folios 140–153.

[4] "Archives de l'Orient Latin," ii, A, p. 173.

M. Couret is not an Arabic scholar; he has entrusted M. Broydé with the task of translating the fragment, and has published the whole of his translation. He regrets that the shortcomings of the Orléans printing offices have prevented his giving the Arabic text therewith for reference. It is indeed much to be regretted, for in more than one instance the translator, who perhaps has done his work somewhat hurriedly, seems to have mistaken the meaning and reading of certain words and proper names. It must be said in his defence that the MS., as I know from my own experience, is often difficult to make out, especially from the absence of the diacritical points—it well deserves the epithet of "pessime scriptum" bestowed upon it by old Joseph Ascari in the short preface prefixed by him to the volume in which it is contained.

I have carefully examined the original MS., collating its text with M. Broydé's translation.

Here is the result of my examination. I shall insert as I go along some observations which may perhaps throw additional light upon this important piece of evidence. I pass over mere trifles, and deal only with matters which are worthy of notice.

P. 32.—"A holy monk." The text adds من دير مر سابا, "of the convent of Mar Sâbâ."

P. 32.—"Cæsarea, the mother of cities." The text has ام المدن, which M. Broydé has literally translated by "the mother of cities." Here it clearly means "metropolis." Cæsarea, in fact, as is proved by many historical documents,[1] was the official metropolis of *Palaestina I.*

P. 32.—"Arsûf." The MS. writes this name ارشوف, with the *shin* instead of the usual *sin*.

P. 32, last line.—After the words "and the destruction of the churches," the translator has left out a clause of the sentence, حتّى يبلغ الى داخل البيكل, "which extended even to the heart of the sanctuary."

P. 33.—"A monk of the convent of *Davalis* (?)" The text has راهب دير الدواكس مار سطش. مار seems, *prima facie*, to point to the name of some saint.[2]

Still, I wonder whether we may not rather have here what would be very interesting—the name of the famous abbot Modestus, upon whom, after the retreat of the Persians, devolved the hard task of repairing the ruins which they had left behind them, and of restoring comparative

[1] Καισάρεια μητρόπολις, "George of Cyprus," I, 999. *Cf.* "Novellæ," 103. The Talmud itself calls it מטרפולין של מלכם (Neubauer, "Geogr. du Talmud," p. 92).

[2] The stem of the *káf* in the MS. shows the curve which distinguishes it from *lám*; it is the *káf* which more often of the two appears without its upper stroke.

prosperity to Palestine. May not عار سطس (which has been left out by M. Broydé) stand for عود سطس = عاد سطس? There is, I think, one strong argument in favour of this conjecture. We actually know that Modestus was abbot of a convent which stood at no great distance from that of St. Saba, and which Eutychius called دير الدو كس, or دير الدو اكس. "There was," he tells us, "at the convent of *Deir ed Dawâkês*, which is the convent of St. Theodosius, a monk named Modestus, who was the Superior of that convent."

Clearly the identity of this convent[1] is completely established, and it seems to imply that of this personage who, it seems, played a leading part not only after the Persian invasion, but also during that invasion, a fact which was before unknown.

I cannot satisfy myself as to the derivation of the name of the convent. الدو اكس (with the variants الذ و اكس and الذ و كس in the singular). Compare, however, the Syriac דוכם = δουξ, *dux*, and the name of another convent in the same district, the *μοναστήριον τοῦ Σχολαρίου*, "the convent of the Scholarius."[2]

The Convent of St. Theodosius is specially mentioned in the "Commemoratorium de Casis Dei,"[3] which is supposed to have been written about the year 808.

P. 34.—"And covered their faces." The text has لطموا: "They beat (their) faces."

P. 34, line 13.—After the words "God was with us," the MS. has a phrase which is omitted in the translation:—

وكنا نقول للعدو باطل تسعا فى خراب المدينة

"And we said to the enemy: It is in vain that ye strive to ruin the city."

P. 34.—"The Convent of St. Saba." Mâr Sâbâ is here spelt مرسابا,[4] instead of the usual عار.

P. 35.—"That I might look in the direction of the Cross." The text has لاصلى: "That I might pray."

[1] Its position is well known. It is the ruin called *Deîr Dosy* or *Deîr Ibn 'Obeîd*, about two leagues to the east of Jerusalem.

[2] I dare not hazard the conjecture that دو كس may be connected with the national origin of Theodosius, and may be a mutilated form of (Καππά)δοξ.

[3] "Itinera Hiersolym" (Orient Latin), i, p. 303; Tobler, "Descriptiones Terræ Sanctæ" (Leipzig, 1874), p. 80. We are there told that the convent had just been plundered by a band of Saracen robbers.

[4] The same spelling occurs before, at p. 140A of the MS. (= p. 32 of the translation).

P. 35.—"As for the Roman armies (troops)," we must add, "which were at Jericho" (الذى فى اريحا).

P. 35.—"Military engines." Observe that the text uses the technical word منجنيقات, "mangonels," which recalls the same word (*μάγγανα*), which is used in Sophronius's hymn (v. 83).

P. 36.—"The crucifixion of the *Pure*." The text has المخلص, which M. Broydé has translated by reading the vowels as *mukhlis* or *mukhlas*. We ought to read it *mukhallis*, and translate it "Of the Saviour."

P. 36, note.—The month of June (614) has already been noted in the Paschal Chronicle as that in which Jerusalem was taken by the Persians.

P. 36.—"As men mow straw"- more correctly "grass" (الحشيش). "The sacrifices which lay upon the altars"; قربان is a singular, and its true meaning is "the host."

P. 37.—"Secret places." مطاهير really means "cellars."

P. 37.—الخايد is certainly not "the cadi," but "the officer in command." The word is used before p. 33 in the plural كبار القواد. It is worth noticing that in his account of the same event, Tabari[1] applies exactly the same word to the Persian commander-in-chief.

P. 37 (compare p. 30, note 2).—The tank near Jerusalem where the Persians penned up their prisoners is more likely to have been the Birket Mamilla than the Birket-es-Sultân. The former has in its favour a local tradition which has endured throughout the ages, connecting the name of Mamilla with the memory of the Persian invasion. Eutychius tells us, not indeed of the prisoners, but of the slain who were in "the place called Mamilla."[2] Our author himself, as we shall see hereafter, mentions Mamilla (he spells it مامله). Moreover, the word البركة is followed in the MS. by another word of which the translator has taken no notice, الما. This is not likely to be the word for "water"; it would be superfluous, and in this case hardly appropriate, since we must suppose that the *birkeh* into which the prisoners were put was more or less dry, or else they must all have been drowned, which the context distinctly proves was not the case. Beside this البركة الما would be a piece of bad grammar. I am, therefore, inclined to think that this is the mutilated name of El Mâ [mila] itself (الما[مله], as we find it written afterwards).

P. 40.—"A holy man's a deacon of a church." The text has

[1] "Annals," series i, vol. ii, p. 102.

[2] Eutychius, "Annals," ii, p. 113; *cf.* p. 242. *See* Tobler's "Topographie von Jerusalem," ii, pp. 62, 180, 219, for an account of Mamilla, and of the legends and traditions connected with it.

من شماسية القيامة, "one of the deacons of the (Church of the) Resurrection," that is to say, of the Church of the Holy Sepulchre.

P. 45.—"It is a wonderful thing that God should have safeguarded the Holy Ark of the Israelites and should not have abandoned the Great Cross."

This passage, with which the fragment ends just after the mention of the restoration of the previous relic to the Emperor Heraelius, is, perhaps, capable of a different interpretation. Here is the original text:—

ومن العجب ان الله حفظ التابوت من بنى اسرايل ر لم ينفذ (?) الصليب المعظم من ختمه

What the writer appears to have meant is this:—It is a wonder that God should have preserved the *tâbût* of the Israelites, and that the venerated Cross should have preserved its seals intact—I suspect that the word ينفذ, which does not make good sense here, is a copyist's mistake for ينفك (يُنفَكّ), from the verb فكّ, used technically in the sense of "breaking a seal" (ختم). To understand this passage, we must refer to Tabari's account, which I have already quoted, according to which the Cross was shut up in a golden *tâbût*, *i.e.*, "coffer," and was buried as soon as the siege began. It may even have been the existence of this *tâbût* which led our author to speak, by analogy, of the *tâbût*, or "ark of the Israelites."[1] We know from other sources[2] that after the fourth century the Cross was generally kept shut up in a silver-gilt reliquary (loculus argenteus deauratus in quo est lignum sanctum crucis). As for the seal—the Patriarch's own seal—which for greater security was placed upon the box that contained the Cross, many writers[3] bear distinct testimony to its existence.

III.

I now come to what is by far the most interesting passage, that wherein, at the end, the Arab writer enumerates a number of places in

[1] Perhaps, however, it is better to take the passage to mean that God had saved the *tâbût*, containing the Cross, from the attacks of the Jews, who, as is well known, took the side of the Persians and did their utmost to have the Christians exterminated. حفظ من has indeed this meaning "to save from."

[2] "The Pilgrimage of St. Silvia of Aquitania," p. 67 (Palestine Pilgrims' Text Society).

[3] *See* the passages quoted by M. Couret from Theodoretus, Alexander, Socrates, Nicephorus, and other writers, in his "La Palestine sous les Empereurs grecs," p. 244.

or near Jerusalem, in a sort of catalogue setting forth the number of the inhabitants who were massacred by the Persians. It would be a waste of time to stop to discuss the correctness of the author's figures, or of the method of calculation which he seems to have employed. Certain it is that poor Thomas and his wife must have had their hands full if they really counted and, what is more, buried the 62,455 corpses spoken of by our author! Taken by itself, the exaggeration of the figures is enough to cast suspicion upon the story; yet the story seems to be based upon real history. Probably the author merely embellished some true tradition. Indeed, the Armenian[1] chroniclers tell us that when the massacre was over, orders were given to count the slain, and it was found that 57,000 persons had perished. Some speak only of 17,000 killed and 35,000 prisoners, which still is a quite respectable figure. It is not impossible that a numbering of the victims really took place, and that the work before us reproduces, wholly or partially, the lists drawn up at the time, with considerable amplifications which can be all the more easily explained if these lists were made out in figures, or in Greek numerical letters. But, as I said before, the real value of the fragment consists in the topographical hints which it contains, and these, at any rate, appear to be founded on fact.

Many of these hints have puzzled the translator. It is worth while to go through the entire passage afresh. I think, therefore, that I cannot do better than give the whole of the Arabic text of the passage, and make a fresh translation of it. I write the place names just as I find them in the MS., without supplying the diacritical points where they are wanting. I shall then discuss those with regard to which I disagree with M. Broydé's transliteration or translation. For convenience I shall arrange the text like a catalogue, numbering the names of places, and putting opposite to each of them the number of corpses found there. These numbers, which I have put in figures, are written at full length in the original. It will be remarked that the total of these figures does not quite agree with the total given by the writer.

وكان رجل يقال له توما اخبر انه اقبر الذين قتلوا و حصر هم هو وامراته قال

"There was a man named Thomas who reported that he had buried those who had been slain, and that he had counted them, he and his wife together, he says that there were—

1. فى مدمح مارى حرحس — 7 at St. George's altar,
2. و من دار الامانه — 18 from the House of El Amana (?),
3. و من الحياب — 250 from the cisterns (?),

[1] "Dulaurier," *op. cit.*, p. 229 (Thomas Ardzrouni et Sépéôs).

290	from the altar of (the church of the Virgin),	.4 و من مدبح الينيه
369	from the church of St. Sophia,	.5 و من كنسه القديسه صوفيه
2112	from the convent of SS. Cosmas and Damian,	.6 و من دير قزمان ودميان
70	from . . .	.7 و من الملب
212	from the House of the Resurrection,	.8 و من دار القيامه
38	from the market,	.9 و من السوق
723	from the street of Smrnkâ (?),	.10 و من حارد (?) سمرنقا
1409	from the house of St. Mark,	.11 و من دار مار مرقس
197	from (the west side ?) of Sion,	.12 و من عربى صهيون
2107	from the Sheep-pool,	.13 و من الابرو بانيكى
1700	from the House of St. James,	.14 و من دار مار يعقوب
308	from Golgotha,	.15 و من الجلجلة
8111	from the Kabâïl (?),	.16 و من القبايل
1708	from the Bkhârûn (?),	.17 و من البخارون
2318	from the fountain of Siloam,	.18 و من عين ساوان
24518	from Mâmila,	.19 و من مامله
1202	from the city (?) of gold (?),	.20 و من مدينه ادهب
4250	from the convent of St. John,	.21 و من دير مار يوحنا
167	from the Royal Gerokomion (hospice for old men),	.22 و من جرقوميون الملك
1207	from the Mount of Olives,	.23 و من طور الزيتون
83	from the Mtrûniyât of the Resurrection,	.24 و من مطرونيات القيامة
102	from the little market,	.25 و من السوق الصغير
417	from the great market,	.26 و من السوق الكبير
38	from the church of St. Serapion,	.27 و من كنسه مار سرابيون

80	from (before ?) Golgotha,	28. و من قدام الجلجلة
6707[1]	from caves, cisterns, and gardens (?)	29. و من المغاير و الجبات و الجنانين
2210	from the Mihrâb of David (the Citadel),	30. و من محراب داود
265	from the interior of the city,	31. و من داخل المدينة
1800	from the place where the breach had been made in the enclosing wall.	32. و من الموضع الذى (هدم) فيه الحايط

فجميع ما قتل فى بيت المقدس من الفرس اثنين و ستين الف و اربعماية خمسة و خمسين

"The total of all those slain at Jerusalem by the Persians amounts to 62,455."

No. 1.—مذبح مارى جرجس. Note the form مارى instead of مار "Saint." It is difficult to identify the site of this church. It must, in any case, be the *Sanctus Georgius* of the *Commemoratorium de casi Dei*,[2] a list of names which is thought to have been drawn up in the year 808.

For an account of the various convents and churches of St. George at Jerusalem *see* Tobler's *Topographie von Jerusalem*, I, pp. 280, 281, 372.

No. 2.—دار الامانة, literally "the house of security" ("of the deposit," or "of the faith"). The second word seems to me to be a transliteration of some mutilated proper name. The first, دار, used here and elsewhere (Nos. 5, 8, 11, and 15), seems to be the exact translation of the Greek word *οἶκος*, in the Christian sense of "holy house, church."

No. 3.—This word, with its last letter unpunctuated, can be nothing but جبات the plural of جب, "cistern," as in No. 29. It would be rash, I think, to try to see in it *Γαββαθᾶ*, or the Lithostrotos of the Gospels, a name which seems to have disappeared early from local tradition.

No. 4.—The reading of this name is doubtful: after *alif* and *lam* there are merely two curves followed by a final *he*; above the two curves there is a dot; below them there is a group of four dots, which would serve for several quite different combinations of letters. It is, however,

[1] Or 6907: the diacritical points are omitted in the word تسعة.

[2] "Itinera Hierosolym." (Orient Latin, i, p. 302). Tobler, "Descriptiones Terræ Sanctæ," p. 78.

possible, I think, to prove that what is meant is a certain *Church of the Virgin*, about which we have elsewhere distinct and copious historical evidence, although it has not hitherto been distinctly set forth.

I shall begin by proving that the church mentioned by our author is the same as another church in Jerusalem whose name, which likewise is extremely obscure, has been preserved to us by Eutychius; the كنيسة الينة. It is evident, if we compare this الينه with the اليندية of our text, that the word, however it may be really spelled, is the same. Their identity is finally proved by the fact that we are told by Eutychius that this very church, together with that of Gethsemane, was one of the first churches destroyed by the Persians;[1] both of them, he adds, are in ruins even to this day.[2] Pococke, the translator of Eutychius, has transcribed this name as *Ecclesia Eleniae*, thereby giving one to understand that it was a *church of Helena*.[3] But it is certain that it is not a *church of St. Helena* that is meant; besides, the name of Helena is written quite differently in Arabic;[4] still less is it a church of *St. Anne*, as some writers have arbitrarily guessed.

In another passage[5] Eutychius tells us about this same church. Peter, the Patriarch of Jerusalem, he says, sent St. Saba to the Emperor Justinian, with instructions to obtain from him several favours, among others, the building of a hospital (*bîmarestân*) for strangers, and the completion of the Kenîset Elîneh, the building of which had been begun by Elias and had not been finished[6]—which favours were granted and straightway carried out.

If we now refer to the Greek writers of the same period, for instance to the *Life of St. Saba*, by Cyril of Scythopolis, what do we find?[7] St. Sabas, sent by the Patriarch Peter, begs Justinian to establish at Jerusalem a hospital (*nosokomeion*) for sick pilgrims, and *to finish the*

[1] Eutychius's "Annals," ii, p. 213—

اول ما انزل خرب كنيسة الجسمانية و كنيسة الينة

[2] Eutychius died in 939.

[3] In another passage, which I quote hereafter, he translates it boldly *Helenae templum*, and to establish this reading he corrects in an *erratum* (II, p. 212, line 15) *Eleuiae* (*Eleniae*) into Helenae.

[4] هيلانة, as Eutychius himself spells it in other parts of his work ("Annals," i, p. 408).

[5] Sepp. "Jerusalem," i, p. 674, evidently trusting to an identification of Tobler's "Jerusalem," i, p. 428, note; but this identification of Tobler's was put forth by him with far less confidence. Compare Tobler's "Die Siloahquelle," p. 173, note 2.

[6] Eutychius, indeed, tells us earlier in his "Annals" (ii, 109), that the Patriarch Elias (who died in 513) built many churches, among others the كنيسة الينة (ولم يتمها) which he did not finish.

[7] § 72, Cotelerius, "Monum. Eccl. Graec.," iii, p. 343.

new church of the Virgin, which had been begun by Archbishop Elias. *Καὶ τὴν αὐτόθι θεμελιωθεῖσαν νέαν τῆς Θεοτόκου εκκλησίαν πρὸ χρόνου ὑπὸ τοῦ ἀρχιεπισκόπου Ἠλία οἰκοδομῆσαι και διακοσμῆσαι.*

Justinian granted the wish of Peter and St. Saba, and sent to Jerusalem the architect and *machinarius* Theodorus, to build the new church of St. Mary, the Holy Mother of God, Ever Virgin. *Ἐπὶ τῷ τὴν νέαν οἰκοδομῆσαι ἐκκλησίαν τῆς ἁγίας Θεοτόκου καὶ ἀειπαρθένου Μαρίας.*[1]

The work lasted for no less than 12 years. The author describes this church, which he calls *ἡ νέα ἐκκλησία τῆς πανυμνήτου Θεοτόκου*—as a wondrous building, surpassing all those of which the Greek writers tell us.

This identification will, I think, be regarded as proved: that which Eutychius calls the كَنِيسَةُ الْبِيعَةِ, and our text calls the church of البينية is indisputably the *new* church of the Virgin mentioned in the "Life of St. Saba," which was begun by the Patriarch Elias, and finished by the Emperor Justinian. This is an important historical point which has hitherto been overlooked by modern writers on the history of Palestine.

This point being established, it becomes, on the other hand, more than probable that this church is no other than the famous Basilica of the Virgin, which, according to Procopius,[2] was built at Jerusalem by Justinian's orders, of which church the Byzantine historian has left us that detailed description, which is the subject of so many controversies among archæologists. Procopius distinctly says that this matchless sanctuary was commonly called by the people the "*new church*" (*νέαν ἐκκλησίαν κοινοῦσιν (?) οἱ ἐπιχώριοι*)—which, as we have seen, agrees exactly with the expression always used by the writer of the "Life of St. Saba" when speaking of that Church of the Virgin which I propose to identify with this one.

This distinguishing name of *the new church* seems to have remained in use for a long time, for the *Commemoratorium de casis Dei*, which was written at the beginning of the ninth century, says distinctly "In *Sancta Maria nova*, quam Justinianus imperator exstruxit, xii."[3] This work draws a clear distinction between this Sanctuary of the Virgin, built by Justinian, and the two other churches at Jerusalem under the same invocation, to wit:—

1. The church of St. Mary,[4] marking the spot where the Virgin was born, *in the Sheep-pool* ("in Sancta Maria ubi nata fuit in Probatica, V.").
2. The church at *Gethsemane*, in the valley of Jehoshaphat, which

[1] Cotelerius, "Monum. Eccl. Graec.," iii, p. 346.

[2] Procopius, "De Aedificiis Justiniani," V, 6. On this subject *see* the various theories supported by Williams, Robinson, Tobler, Fergusson, Sepp, de Vogüé, &c.

[3] "Itinera Hierosolym." (Orient Latin, i, p. 302).

[4] Theodosius, A.D. 530, Palestine Pilgrims' Text Society, vol. ii, p. 11.

marks the place where the Virgin was buried ("in valle Josaphat, in villa que dicitur Gethsemane, ubi Sancta Maria sepulta fuit, ubi sepulcrum ejus est venerabile").

This accurate description now enables us to make out distinctly among the three churches of the Virgin mentioned by Antoninus Martyr, as being in existence in Jerusalem in 570, which have too often been confused by modern critics, the following :—

1. St. Mary, of Gethsemane ("basilica Sancte Marie, in qua monstratur, sepulcrum . . . . .").
2. St. Mary, of the Sheep-pool ("ad piscinam natatoriam, que quinque porticus habet, et in una earum est basilica Sancte Marie, in qua multe fiunt virtutes").
3. The St. Mary's which Antoninus Martyr found when he came from Sion, with its numerous household of monks, its hospices for lodging male and female pilgrims—in which he himself was lodged—and its hospital for the sick ("de Sion venimus in basilicam Sancte Marie, ubi est congregatio magna monachorum, ubi sunt et xenodochia virorum et mulierum ; susceptus peregrinus sum ; mense innumerabiles, lecti ægrotorum sunt amplius tria millia").

This last basilica of St. Mary is beyond doubt that which had been built by Justinian a few years before. What, in my opinion, renders this certain is that Procopius informs us that Justinian founded and attached to the sanctuary a hospice for pilgrims and a hospital for the poor. It may be remembered, also, that St. Saba asked Justinian to build both a hospital for pilgrims and the great basilica of the Virgin.

To sum up, the result of all these identifications is that the basilica of the Virgin, built by Justinian, and spoken of with so much admiration by Procopius, is the same as the church of البينية mentioned in our text. Though this piece of evidence opens a new field, still this is not the place to discuss the much-vexed question of the true site of this basilica. I shall confine myself to saying a few words about the possible derivation of this obscure Arab name. When I compare the certainly cognate forms البنة and البنية,[1] given by Eutychius and our text respectively, I ask myself whether there may not lurk in these forms a transliteration of the Greek ἡ Νέα, *the new*, which, according to the testimony of Procopius, confirmed by the "Life of St. Saba" and the treatise "De casis Dei," seems to have been the specific and popular title of Justinian's great Basilica.[2] If so, we ought to restore it to its normal form, as البنية, or البنية, *en-neia*, *en-neiya*, or even *en-nëa*,

[1] This latter form being subject to the incidences of palæography, which I have laid down, *supra*.

[2] Compare the form νειότατος co-existent with νεώτατος.

pronounced with a short *i* between "e" and "a," which seems to argue that there was a vulgar form *neia* for *νέα*, which we may admit[1] without going so far as to refer it to the influence of the Ionian dialect, which is unlikely. Strictly speaking, we may conceive a form النيئة, which would be a very faithful transliteration of *νέα*, with a hamzated *ya* to mark the hiatus between the two vowels. As for the final alpha represented by *ha*, our text itself furnishes us with a certain example, and one very much to the purpose (*see* the following number): صوفية (and not صوفيا) = **Σοφία**.

No. 5.—كنيسة القديسة صوفية, "the Church of St. Sophia." —This is the basilica mentioned in many of the accounts of pilgrimages[2] in the seventh century, which was supposed to be built on the site of the Prætorium, or "House of Pilate." Perhaps it is also mentioned in a fragment of a Greek inscription in Jerusalem, hastily reproduced in Waddington's collection (No. 1903), of which I took a better copy in 1869.

No. 6.—قزمان, which M. Broydé translated *Kesman* (?), should be corrected to قزماز, or rather قزماس;[3] it comes from the vulgar form **Κοζμᾶς** for **Κοσμᾶς**. The treatise "De casis Dei,"[4] mentions, about the year 808, the existence of a sanctuary at Jerusalem dedicated to the two saints, patrons of physicians, "In sancte Cosma et Damiano, ubi nati fuerunt, III, et ubi medicabant, presbyter I." This must be same of which Moschus speaks in his "Pratum Spirituale":[5] ***εἰς τὸν ἅγιον Κοσμᾶν καὶ Δαμιανόν***. We hear also of a church of St. Cosmas[6] at Jerusalem at the time of the Crusades. As is well known, the saints Cosmas and Damian are worshipped together, and in many places churches are built under their united invocation.

No. 7.—M. Broydé reads الصليب, "the Cross," but there is no *sad;* the group of letters is very uncertain; the fourth may be a *kaf* instead of a *lam*; المكتب, "the school," is not likely to be the true reading.

[1] I have not the original text at hand, and cannot say whether the monastery of Neas mentioned by St. Gregory the Great (*ap.* Couret, "La Palestine," p. 214, n. 7), has any connection with Justinian's *ἐκκλησία νέα*.

[2] "Breviarius de Hierosolyma" ("Itinera" of the Orient Latin Society, vol. i, p. 59; Palestine Pilgrims' Text Society, vol. ii, p. 16) "*basilica grandis . . . et vocatur Sancta Sophia*"; Theodosius, § 7, Palestine Pilgrims' Text Society, vol. ii, pp. 10, 11, "*ecclesia Sancte Sophie*"; Antoninus Martyr, § 23, Palestine Pilgrims' Text Society, vol. ii, p. 19, "*basilica Sancte Sophie.*"

[3] Compare قزماس بمار in Eutychius's "Annals," vol. ii, p. 513.

[4] "Itinera Hierosolym.," p. 302.

[5] Migne, "Patrologie grecque," vol. lxxxvii, § 127 (twice).

[6] Paoli, I, 236, "Guido de S. Cosma de domibus . . . juxta S. Cosmam."

No. 8.—For دار, *see* above, in the comment on No. 2. دار القيامة = οἶκος τῆς Ἀναστάσεως ; exactly what we call "the Church of the Holy Sepulchre."

No. 10.—I do not see what name can lurk under this formula: probably some more or less mutilated transcript of a Greek name. The first letter may not be a *sin*: the whole figure may be divided into two curves, which, by the addition of different diacritical points, might form any combination of letters whatever.

Could it be a transliteration of the name Veronica (Βερονική, Vironice, Vironica, Veronica, Beronica)? If so, we must assume a primitive form بيرنقا or بيرونقا. It is true that the localisation of the legend of St. Veronica at Jerusalem is of late date. Tobler (*op. cit* I, p. 251) says that the House of St. Veronica is mentioned by pilgrims for the first time in 1449.

No. 11.—It is hard to prove that this Church of St. Mark is the same as the مار مرقس of the present day, where the Syrian convent is, for the historical notices of the latter do not extend beyond the fifteenth century.[1]

No. 12.—M. Broydé reads غر بى "on the west side of Sion"; one may be permitted to feel some doubt about this.

No. 13.—Instead of M. Broydé's meaningless El-Ibrounatik we ought simply to read الا بروباتيكى el-Ibroubatîkî, an exact transliteration of προβατική, the Sheep-pool, *Probatica*. This Gospel name for the church which afterwards became *St. Anne's*, by a curious alteration of the legend which I have explained elsewhere, was still perfectly well known in the time of Sophronius, who uses it in one of his odes.[2]

No. 14.—"The House of St. James."—Perhaps this is the Church of St. James now in the Armenian Convent, although this church does not appear in any descriptions of Jerusalem earlier than the eleventh century. I find, however, in the treatise *De casis Dei*, written about 808, mention of a monastery or church under this invocation (*in Sancto Jacobo*).[3] Theodosius[4] also speaks of a place near the city (south of the

[1] Theodosius ("Itinera Hier.," i, p. 65; Palestine Pilgrims' Text Society, p. 10), writing in the sixth century, places "the House of St. Mark the Evangelist" on Mount Sion.

[2] Migne, "Patrologia graeca," vol. lxxxvii, p. 3822 (compare St. John Damascenus). (*See* Palestine Pilgrims' Text Society, vol. xi, Extracts, &c., pp. 31, 32). This ode is of rare interest, for it shows us in process of formation the legend which by a play upon words has made out of Bethesda "the House of Grace," the *Beît Hanna* of the Arabs, with the double meaning of "House of Grace" and "House of Anne" (which means the same thing).

[3] "Itinera," &c., i, p. 302; Tobler's "Descriptiones," p. 78.

[4] "Itinera," &c., i, p. 65.

Haram) which was called *Sanctus Jacobus*; but he does not say that there was a church there.

No. 16.—In spite of its apparently Arabic form, this name must also be a transliteration. One might be tempted to read قبانيل = *campanile*; but any mention of the belfry of the Church of the Holy Sepulchre would have the effect of bringing the date of the fragment down to the period of the Crusades, seeing that this belfry, which is altogether built to suit Western usages, only dates from the twelfth century.

No 17.—البحارون is perhaps a transliteration of some Greek name (ending in *ον* or *ων*?). Palæographic alterations possible.

No. 18.—"The Fountain of Consolation." This is merely the *Fountain of Siloam*, with its Arabic name correctly written *'Aîn Selwân*.

No. 19.—"Namila" should be *Mamila*, ماملة; it is the name of the Pool Mamilla, of which I have already spoken at length, and where the prisoners were penned up. It should be noted that this place yielded the greatest number of dead bodies (24,518 !).

No. 20.—I have sought in vain for the meaning of "the golden city." It seems difficult to connect it with the *Golden Gate*, a mistaken title which did not come into being till later, apparently through the Crusaders *Porta Speciosa*, Πύλη Ωραία, *portes Oires*).[1] The two words in the MS. are perhaps two misspelt transcripts from the Greek. Can they possibly allude to some church dedicated to St. John *Chrysostom*?

No. 21.—There were several churches and convents of St. John[2] at Jerusalem, and we have only too many to choose from. This church is perhaps that mentioned in the *Commemoratorium de Casis Dei*,[3] in the words "in sancto Johanne, ubi natus fuit."

No. 22.—"Of Hercanien—the—King" (?).—The quite different reading which I propose instead of this, "Of the *djerokômion* of the King" seems to be indisputable. The Arabic word, جرقوميون, which is very accurately punctuated, is nothing more than an exact transliteration of the Greek *γηροκομεῖον*, "hospice for old men." This is perhaps the same establishment which is spoken of in the year 531, in the life of John the Silent, by the Monk Cyril. "He (St. John) came to Jerusalem and abode in the first *gerocernium* (*sic*) of the Holy City, in which is the oratory of St. George[4] the Martyr." I take the word *gerocernio* in this passage to be merely a mistake for *gerocomio*. In 1868 I took a copy and squeeze of a Greek inscription which is built into the north wall of the city upside down, near the Gate Bâb ez-Zâhireh.

[1] "La Citez de Jherusalem," §§ 11, 12, 13, 15, 17.

[2] "Saint Joh" in M. Broydé's translation is apparently a misprint.

[3] "Itinera," &c., vol. i, p. 302; Tobler's "Descriptiones," p. 79.

[4] "Acta Sanct," Bolland., May 13, III, p. 233. I have not by me anything more than a quotation in *Contributions towards an Index bearing upon the topography of Jerusalem* (p. 30), by B. M'Grigor.

It contains the dedication of a γεροκομεῖον (*sic*) which cannot be the one in the text: it was a hospice for women, founded by John and Verine of Constantinople under the invocation of the Virgin.

The *gerokomion* of our Arabic text, being qualified as that "of the King," must be an establishment founded by some Byzantine Emperor. Can it be one of Justinian's [1] hospices? or is it one of the *gerokomia*, *ptochia*, or *monasteria*, built by the Empress Eudoxia? [2]

No. 24.—M. Broydé has left out this passage. What can the مطرونيات of the Resurrection be? What is meant is apparently some outbuilding connected with the Church of the Holy Sepulchre. Can it be a mutilated transcript of Μαρτύριον? Perhaps it is the plural, "the chapels." We know that *Martyrion* was, strictly speaking, the name of one of the three buildings which, together, formed the church; namely, the *Anastasis*, or Church of the Resurrection proper, with the Holy Sepulchre; *Calvary*, or Golgotha, and the *Martyrion*, or Constantine's basilica, including the place of the Invention of the Cross. The text has already spoken of the *Kiâmeh*, or *Anastasis*, and of the *Juljuleh*, or Golgotha, so that we may have here the Martyrion, which would complete the group. The distinction between the three buildings which bear these names had already been clearly laid down by Eucherius (§ IV) about the year 440. Compare Arculfus (§ VII) "basilica . . . . a rege Constantino constructa, que et *martyrium* appellatur." Also Bede, § II.

The Pilgrimage of St. Sylvia, whose date is about the year 385, speaks in express terms of the *Martyrium*, which, nevertheless, was regarded as forming part of Golgotha (ed Gamurrini, p. 63, *et passim*). [3]

Nos. 25 and 26.—The little and the great markets. The author has already spoken (No. 9) of "the Market" without any qualification. This would make three distinct markets; and this was indeed the number of the markets of Byzantine Jerusalem at the time of the Arab conquest, as we learn from an ancient and curious tradition preserved by Mudjîr ed-Dîn.[4]

No. 27.—"Church of St. Serapion." The MS. has at full length *Serabiûn*, that is, *Serapion*. I find no mention in any other writer of a church at Jerusalem dedicated to St. Serapion. Perhaps it may be a copyist's error, and instead of the *sin*, with which it begins, we ought to read two curves representing letters with diacritical points. But the

[1] Procopius *De Aedificiis*, V, 6.

[2] Life of St. Euthymius, ed. Cotelerius, "Mon. Eccl. Gr.," vol. iii, p. 282.

[3] This last and most interesting description of a pilgrimage is generally attributed to St. Silvia of Aquitania. Is this attribution certain? May we not have here the detailed account of the pilgrimage of St. Paula, which took place at about the same period, and of which we hitherto knew nothing save from St. Jerome's very brief notice? or may it not be the pilgrimage of Marcella?

[4] *El-uns el-djelil*, Cairo, p. 401. He adds that these three markets are of Byzantine construction (min binâ er-Rûm).

combinations which I have thought of based upon this notion have given me no satisfactory result. The *Life of Peter the Iberian*[1] tell us of a convent at Jerusalem founded by St. *Passarion;* can سرابير ون be an inverted form of بساريون *Bassarion = Passarion*?

No. 28.—One could read this قدلم, but the word or name intended could hardly be explained. It seems better to read it, as M. Broydé does, فدام, and understand it to mean "in front of Golgotha"; what is intended is probably the parvise, or open courtyard before the Church of the Holy Sepulchre.

No. 29.—The second word is not الجبال, as M. Broydé seems to have read it, to judge by his translation ("mountains"), but rather الجباب (*see* before, No. 3). جنابن if it be really the word meaning "gardens," must be regarded as a plural formed from a plural, جنّة, جنان

No. 30.—"The ruin of David." M. Broydé has read and translated this as though it were مخراب (a form, by the way, which is not Arabic.) It is really the word *mihrâb*, "oratory." The Mihrâb of David, at Jerusalem, is well known from Arabic writers[2] and traditions; it is the name which is given at the present day to the Tower of David, or the Qal'a, "the fortress," which is on the right hand as you enter by the Jaffa Gate.

No. 32.—"From the place where the wall is." This means nothing at all, as the wall, of course, reaches all round the city. The text really has also the word هدم, "has been destroyed": the copyist has written this word badly, has crossed it out and rewritten it correctly on the margin. It means the place where the breach was made by the besiegers, by means of the mine, as I have already explained at length (p. 37). Moreover, in another passage (p. 36 of the translation), the author distinctly states that the Persians *made a breach* with their siege engines in the wall of the Holy City, and he uses the same word, هدموا حايط المدينة.

In this long list of holy places there are two, of which one is surprised to find no mention: first, the important Church of Gethsemane, which Eutychius distinctly tells us was destroyed by the Persian invaders; and secondly, the great basilica of St. Stephen, built in 460 by the Empress Eudoxia, the wife of Theodosius, at the gate of Jerusalem. It was, by reason of its position, exposed to the first attacks of the Persians, and it is probable that it did not escape from destruction and slaughter.

[1] "Raabe *Petrus der Iberer*," pp. 33, *seq.* (*cf.* Chabot, Revue de l'Orient Latin, 1895, p. 372).

[2] *See*, for example, Eutychius's "Annals," vol. i, p. 354.

Perhaps the names of these two churches lurk under some of these in the Arabic text which have been misspelt, and whose original form I have been unable to restore.[1]

P.S.—One might also think that دار الامانة, No. 2, p. 43, alludes to the Convent of St. Melanie (الامانة for ملانة ?); and that under No. 4 البنية (البنة of Eutychius) might be corrected to البنية *el-Banaya* = *Παναγία*. But it is with all reserve that I indicate these conjectural restorations.

NOTE ON RECENTLY FOUND NIPPUR TABLETS.

By Professor H. V. Hilprecht, Ph.D., D.D., LL.D.

I examined recently 730 clay tablets of Nippur which had been discovered in a room (5·5m. by 2·75m. wide) about 6m. below the surface in the central part of the north-western ridge of the ruins of Nuffar. A considerable number of these cuneiform documents were intact and in a fine state of preservation, but the rest of them were cracked and broken or otherwise more or less damaged. After a careful examination of the building itself, and of the condition, position, and, first of all, contents of the tablets found therein, it became evident to me that the excavated room had been once used as a business archive by the wealthy and influential firm of *Murashû Sons of Nippur*, who lived in the time of Artaxerxes I (464–424 B.C.) and Darius II (423–405 B.C.), in whose reigns the documents are dated. The importance of these tablets, which furnish us valuable information concerning the cultivation of the ground around Nippur, the lease of canals and works for irrigating the fields and date-groves, and, first of all, concerning the payment of taxes by the different classes of the population, is increased by the fact that they give us a faithful picture of the life in Babylonia at the time when Ezra led the second party of Jewish exiles from Babylonia to Palestine.

Particularly interesting are the proper names of these tablets. The early Babylonian names begin to disappear, and foreign names taking their place become very common. Especially numerous are Persian and Aramean personal proper names, such as *Arabak*, *Arsham*, *Artâ*, *Artabarri*, *Artaḫshar*, *Attarapâta*, *Bagâ*, *Baga'dâta*, *Bagaishshu*, *Baga'mîri*,

[1] For example, it may be that No. 3 is a corrupted form of الجسمانية, Gethsemani, especially considering the passage in Eutychius which speaks of the Church of Gethsemane and the Church of the Virgin (البنية = البنية, No. 4 of our text) side by side. As for the basilica of St. Stephen, we might think of No. 2 (دار الامانة). But these are merely guesses.

Mānūshtānu, *Mitradâtu*, *Shatabarzana*, *Tiridâta*, &c. (Persian), on the one hand, and *Abdu'*, *Addu-natanna*, *Appussâ*, *Aqabi-ilî*, *Attar-nûri'*, *Barîki*, *Barîk-Bêl* (or *Bôl*), *Ilî-qatari*, *Nabû-ḫaqabi*, *Nabû-iâḫabi*, *Nabû-zabad*, *Qusu-iâḫabi*, &c. (Aramean), on the other hand.

Unusually large is the number of Jewish names known from the Old Testament, especially from the Books of Ezra and Nehemiah. Compare *Addanu* (= Addan, Ezra ii, 59, and = Addon, Neh. vii, 61), *Addurammu* (= Adoram, 2 Sam. xx, 24, wrongly pointed by the Massoretes), *Bibâ* (= Bebai, Ezra viii, 11), *Bişâ* (= Bezai, Ezra ii, 17), *Gadaliâma* (= Gedaliah, 2 Kings xxv, 22), *Ḫaggâ* (= Haggai, Haggai i, 1), *Ḫadanna* (= Adna, Ezra x, 30), *Ḫananiâma* (= Hananiah, 1 Chron. iii, 19), *Ḫanûn* (= Hanun, 2 Sam. x, 1), *Igdaliâma* (= Igdaliah, Jer. xxxv, 4), *Ilî-zabadu* (= Elzabad, 1 Chron. xii, 12), *Mattaniâma* (= Mattaniah, Ezra x, 27), *Minaḫḫimmu* (= Menahem, 2 Kings xv, 14), *Miniamîni* and *Miniamé* (= Benjamin), *Natan-ilî* (= Nathaniel), *Shabbata*, (= Shabbethai, Ezra x, 15), *Shamaḫûnu* (=Simeon), *Shilimmu* (= Shillem, Gen. xlvi, 24), *Zabûdu* (= Zabbud, Ezra viii, 14), *Zabînâ* (= Zebina, Ezra x, 43), *Zimmâ* (= Zimmah, 1 Chron. vi, 20), &c.

There can be no doubt that a considerable number of the Jewish exiles carried away by Nebuchadnezzar after his conquest of Jerusalem were settled in Nippur and its neighbourhood. Of this fact there are various proofs. The Talmudic tradition, which identifies Nippur with Calneh (Gen. x, 10), gains new force in the light of these facts. It is also important for our theological students to learn, from two of the inscriptions which I deciphered, that "the river Kebar, in the land of the Chaldeans," by which Ezekiel, while among the captives of his people at Tel-abib, saw his famous visions of the cherubims (*cf.* Ezra i, 1, 3; iii, 15; x, 15), and for which we hitherto searched in vain in the cuneiform literature, is identical with the (*nâru*) *Kabaru*, a large navigable canal not far from Nippur.

The דתברזא (Dan. iii, 2), a Persian word for a certain officer, appears as (*amēlu*) *dâtabâri* frequently in these inscriptions. One hundred and twenty of the most important texts, together with a critical introduction from my pen and a complete concordance of all the proper names, so important for all Iranists and Semitists, particularly Old Testament students, will be published in the forthcoming ninth volume of the larger work, "The Babylonian Expedition of the University of Pennsylvania," edited by myself. In this volume, which will be out at the beginning of December this year, I will also translate and analyse a number of representative tablets of this collection. The book will be for sale by Luzac and Co. A volume on the inscriptions dated in the reign of Darius II is in the course of preparation.

CONSTANTINOPLE, *October* 20*th*, 1897.

ON THE DATE OF THE SILOAM INSCRIPTION.

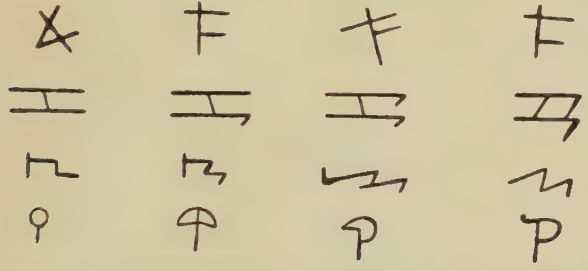
I.—By E. J. Pilcher, Esq.

If a numismatist 2,000 years hence were to examine an English Gothic florin of, say, the year 1886, he would observe that the legends upon it were in "Old English Text." Upon one side he would read the Royal titles in abbreviated Latin, and upon the other he would trace the English words "One florin. One-tenth of a pound." He would conclude from this that in the nineteenth century the Latin language was more or less understood; and that it was used for certain formal purposes. He would also notice that the words expressing the value of the coin were in the Old English alphabet, from which he would very naturally infer that this alphabet was popularly understood: at least to an extent sufficient to enable ordinary people to decipher the inscription upon a coin. Therefore, if he were at the same time confronted with an inscription found in England, he would not rashly conclude that because it was in Latin it must necessarily be a relic of the Roman occupation of Britain; or, if it should be in the "Old English" character, he would not jump to the conclusion that it was necessarily a memorial of the Middle Ages. It is somewhat paradoxical to be told that this reasoning does not apply to the question of the Old Hebrew alphabet.

The Old Hebrew alphabet has had a long struggle to get itself recognised; and many ingenious attempts have been made to explain it away altogether. It is now no longer urged that Moses wrote the Pentateuch in the Square Character, together with the points and vowels; it is admitted that the Jews originally employed that branch of the Phœnician alphabet which we call Old Hebrew; and it is only the late use of the latter alphabet which it is attempted to dispute. The evidence of this late use, however, would seem to be peculiarly strong. We have Jewish coins ranging in date from 135 B.C. to 135 A.D. which in every case have their Hebrew legends, and even their marks of value, in the Old Hebrew character. Professor Clermont-Ganneau has discovered a sculptured capital with a bilingual Græco-Hebrew inscription, which he attributes to the fourth century A.D., on which the Old Hebrew character occurs. Further, in *The Times* of August 3rd, 1897, Mr. F. C. Burkitt announced that in the fragments of Aquila lately discovered by Dr. Schechter, the tetragrammaton appears in the Old Hebrew character, which fact would go far to support the view that the manuscripts used by Aquila were in Old Hebrew also, and not in the square alphabet. Aquila is usually considered to have completed his version about 126 A.D., *i.e.*, shortly before the revolt of Bar-Cochab, who used the Old Hebrew alphabet upon his coins. In the face of all this evidence of the use of Old Hebrew—upon coins, upon stone, and in manuscripts—it is surely unnecessary to enter into any lengthened defence of the view that this character *was* used to a comparatively late period.

It has even been suggested that the later employment of the Old Hebrew character was due to an antiquarian revival of the more ancient style of writing; but this hypothesis totally ignores the fact that the lettering of the coins (to limit ourselves to them) does not *revive* any ancient forms; but makes progression continually in the direction of the modern Samaritan alphabet. On the Bar-Cochab coins, the Samaritan *Kaph* appears for the first time. This cannot be a "revival," because it did not exist before. We are not dealing with a fossilised script, but with one which was being modified by daily use.

My paper in the "Proceedings of the Society of Biblical Archæology" was essentially a study of the old Hebrew alphabet in its later developments. The criticism of Colonel Conder in the July *Statement* was unfortunately a hasty one; and no doubt his many pressing duties prevented him from examining the subject with his accustomed thoroughness and accuracy. It will therefore hardly be necessary or profitable to discuss these criticisms in detail. The points at issue may be shown in the following table :—



Here we see four of the typical Siloam letters, and it will be noticed that the forms of these letters really belong to a very late stage in the development of the old Hebrew alphabet. Palæographic study of the subject shows conclusively that these were the forms in use about the beginning of the Christian era; and it may be said with confidence that they did not exist in the seventh and eighth centuries B.C., seeing that we have ample dated material of that period in the inscribed Assyrian weights and the Zenjerli inscriptions. The still earlier Lebanon texts and the Stela of Mesha, are equally far removed from the Siloam alphabet.

The theory which connects the Siloam inscription with Hezekiah rests purely on the fact that the Old Testament happens to preserve a record of the additions made by that monarch to the water supply of Jerusalem. Under the peculiar conditions of that city it is extremely probable that nearly every king busied himself in this direction, and we may yet come on the cisterns and aqueducts of Adonizedek. If one were inclined to be hypercritical, it might be pointed out that the Siloam tunnel is called in the inscription a "Niqbah," נקבה, and we have no record of any king of Judah constructing a *Niqbah*; in fact, the word does not occur at all in the Old Testament. What Hezekiah is stated to have made was a

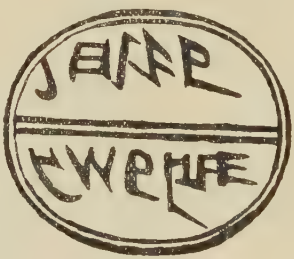
תעלה, which from other passages (such as 1 Kings xviii, 32) was evidently a mere trench, like Dr. Schick's aqueduct. The ascription of the Siloam tunnel to Hezekiah would therefore appear to be somewhat precarious.

II.—By Ebenezer Davis, Esq.

From Colonel Conder's paper "On the date of the Siloam Text" in the July issue of the *Quarterly Statement*, I learn that an attempt has been made by a writer in another periodical to reduce the antiquity of this famous inscription.

This writer expresses the opinion, as the result of his study of the Siloam Text, that it is far more modern than scholars have hitherto supposed, and belongs not to the Solomonic, but to the Herodian age.

The facts and arguments which Colonel Conder brings forward in support of the old view as to the great antiquity of this epigraph will be found very hard to set aside or refute. All I wish to do is to add a few more facts to those adduced by him, which certainly point in the same direction. Brief reference having been made in Colonel Conder's paper to the Seal of Haggai, perhaps a few facts relative thereto may not be unacceptable.



This small but interesting object was found 30 years ago, and described by Captain Warren, R.E., and the Rev. Greville J. Chester, in "The Recovery of Jerusalem" (London: Bentley, 1871). In this volume may be seen a figure of the seal, real size, and also a plan of the excavations showing the exact spot at which it was discovered.

We read, p. 123: "At the south-west angle was found a second, and less ancient pavement. It was under this pavement that the Seal of Haggai, the son of Shebaniah, was found in 1867."

P. 128: "At a depth of 22 feet was found the signet stone of Haggai, the son of Shebaniah, characters engraved in Hebrew of the transition period."

P. 493. Full-sized figure thus described: "Small seal of hard close-grained black stone. This is one of the few *Jewish* objects discovered by the Society. It was found at the south-west angle of the Haram area. The inscription is in old Hebrew characters arranged in two lines. It

records the name of the owner, Haggai, son of Shebniah. Its discovery is related above."

This short text of three words, לחוי בן שבניה, gives us eight letters of the old Hebrew alphabet, *Beth*, *Gimel*, *He*, *Cheth*, *Yod*, *Lamed*, *Nun*, and *Shin*.

Beth, *Gimel*, *Cheth*, and *Yod* are normal antique types occurring in texts of eighth century B.C.

He has an old form, occurring also in the earliest Greek.

Lamed has an old form, but not elongated as on Siloam text.

Nun has the transition form, as at Sebal, 600 B.C.

Shin, as on Baal Lebanon Bowl and Moabite Stone, the earliest known texts.

I infer that Mr. Pilcher compares the Siloam letters with those on the seal of Haggai, and finds much similarity between the scripts of these two texts, and as he believes the seal to belong to the age in which it was lost (which he determines to be that of Herod), he argues that the Siloam writing must also have been executed about the same time, thus post-dating the latter by about 700 years, and entirely destroying its value for the purposes of comparative palæography and Biblical criticism.

The argument grounded on the circumstance of this seal having been found at the base of the Temple wall, has to me no force whatever, as small antiques, such as seals, might easily be preserved for centuries, and afterwards be lost anywhere and anywhen. Their real age can be known only by a strict comparison of their types with those of texts of known date.

Moreover, this seal gives us בן, the old Biblical Hebrew for "son," instead of the Aramaic בר, which we should expect to find in the Jerusalem speech of the Herodian age, so that there is nothing in either the language or the writing of the seal to indicate that it is not, at least, six or seven centuries older than Mr. Pilcher would make it out to be.

That "bar" was used instead of "ben" at the time at which the seal is supposed to have been lost, may easily be seen by reference to the Gospels and Acts, where we find such names as בר־יונה, "son of Jonah," Matt. xvi, 17; Bar Jesus, בר־יהושע, "son of Joshua," Acts xiii, 6; Barnabas, בר־נבא, "son of Naba," Acts iv, 36: Bartholomew, בר־תלמי, "son of Tolmai;" Bartimæus, בר־טמאי, "son of Timæus," Mark x, 46. Late Hebrew inscriptions also have been found in which בר occurs; one such is noticed by Mr. C. W. King, in his "Handbook of Engraved Gems," *Hillel Rabbi, bar Mosheh*, i.e., *the Rabbi Hillel, son of Moses*. Compare also a text mentioned by Colonel Conder, containing the name of *Eleazar bar Azariah*, "Syrian Stone Lore," p. 261. This is written in a debased style, rudely imitative of the old Jewish script, and very different from the clearly cut and homogeneous types of Haggai's seal. It is, however, just such writing

as we should expect to find in use by the Palestinian Jews of the "Herodian age." In any form the older writing had ceased to be familiar at the period in question, the "square" character having superseded it for literary purposes, and probably to a great extent for epigraphy also; what few instances we have of its employment after this time may easily be accounted for as pseudo-archaic survivals, as, for example, the coins of the so-called revolts, if indeed these be not actual forgeries. Political and religious motives might suggest the employment of antique forms on a national coinage, but would not be likely to operate in the fabrication of such an epigraph as that found at Siloam. Nor would a "clerk of the works" of Herod's time, who chose to hand down to posterity his explanation of an engineering blunder, such as that made in the Siloam tunnel, be likely to do so in the unfamiliar idiom of Isaiah and Deuteronomy rather than in his everyday Aramean or Hellenistic Greek.

At the time of Colonel Conder's residence in Southampton he favoured me with the use of his "squeese" of the Siloam inscription, by which means I was enabled to study the text at leisure, and to acquire—from a reliable source—a fair acquaintance with its peculiarities of language and writing. I formed an opinion then, which I have seen no subsequent reason to alter, that its script approximates very nearly to that of the Law and the Prophets, and has preserved more exactly than any other known monument the ideal forms of many elements of the old Palestinian alphabet.

If Mr. Pilcher's hypothesis were correct, we should have some indication in the inscription itself of its late date, but of this there is none whatever. Its alphabet contains no very late types, while its language is (as Colonel Conder points out) that of the classical period. If the table of the script of the "Lion Weights" given in Madden's "Jewish Coins" be correct, the letter *Aleph* had begun to assume its peculiar Siloam form as early as 850 B.C. We may also compare a form of *Aleph* occurring at Abu Simbel. The variation between the Israelite *Aleph*, *Mim*, and *Nun*, and the same letters in the texts of Baal Lebanon and Dibân seems to have been brought about by a desire on the part of the scribe to avoid acute angles whenever he could do so. This accords with the fundamental principle in the science of palæography, known as "the law of least effort." It means that writers in every land and every age have always tried to get through their work as quickly and easily as possible. *Tzade* seems early to have lost its original form. Judging from the variety of shapes given to this letter, it appears to have been one that the old scribes hardly knew what to do with. It is supposed to have been originally a picture of a fish-spear or javelin with its attached cord or "amentum." Perhaps if we turn the old form of the letter through a right angle, as was done with some of the elements in the primitive graphic systems, we shall not find so much difference between the two types of the character. For all we know, the Jerusalem form may be the older.

SOUTHAMPTON, *September* 1*st*, 1897.

(*To face p.* 61.)

MONTHLY METEOROLOGICAL TABLE

Deduced from observations taken at Tiberias, by Mr. LAWIN, at about 652 feet below the level of the Mediterranean, and 30 feet above the level of the Sea of Galilee, open on all sides.
Latitude, 32° 48′ N.; Longitude, 35° 34′ E.

Months.	Pressure of atmosphere in month—corrected to 32° Fahrenheit.							Temperature of the air in month.							8 a.m.								4 p.m.								Rain.	
															Mean reading.			Vapour.					Mean reading.			Vapour.						
	Highest.	Lowest.	Range.	Mean at 8 a.m.	Mean at 4 p.m.	Lower reading at 4 p.m. than at 8 a.m.	Mean at 8 a.m. and 4 p.m.	Highest.	Lowest.	Range.	Mean of all highest.	Mean of all lowest.	Mean daily range.	Mean.	Dry bulb.	Wet bulb.	Dew point.	Elastic force of vapour.	Weight in a cubic foot of air.	Additional weight required for saturation.	Degree of humidity.	Weight of a cubic foot of air.	Dry bulb.	Wet bulb.	Dew point.	Elastic force of vapour.	Weight in a cubic foot of air.	Additional weight required for saturation.	Degree of humidity.	Weight of a cubic foot of air.	Number of days on which rain fell.	Amount collected.
1896.	in.	in.	in.	in.	in.	in.	in.	°	°	°	°	°	°	°	°	°	°	in.	grs.	grs.	°	grs.	°	°	°	in.	grs.	grs.	°	grs.		in.
January	31·023	30·333	0·690	30·723	30·673	0·050	30·698	68·0	34·0	34·0	61·6	45·8	15·8	53·7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	11	2·78
February	31·109	30·427	0·682	30·820	30·761	0·059	30·791	76·0	40·0	36·0	62·2	47·7	14·5	55·0	53·7	51·3	49·0	·346	3·9	0·7	84	555	58·4	54·0	50·0	·362	4·1	1·4	74	549	12	4·03
March	30·820	30·228	0·592	30·623	30·551	0·072	30·587	75·0	41·0	34·0	68·6	47·9	20·7	58·3	59·2	56·9	54·8	·431	4·8	0·8	86	546	64·6	58·7	53·8	·415	4·5	2·1	68	539	9	2·08
April	30·864	30·368	0·496	30·662	30·588	0·074	30·625	95·0	43·0	52·0	77·8	54·5	23·3	66·1	65·3	61·1	57·7	·477	5·3	1·6	77	539	72·3	64·4	58·4	·492	5·4	3·2	61	531	5	1·45
May	30·735	30·263	0·472	30·586	30·503	0·083	30·544	99·0	54·0	45·0	87·3	60·7	26·6	74·0	73·2	68·0	64·2	·601	6·6	2·3	73	529	83·0	70·2	61·6	·550	5·9	6·1	49	518	0	0·00
June	30·661	30·235	0·426	30·520	30·422	0·098	30·471	111·0	59·0	52·0	95·2	65·2	30·0	80·2	81·2	74·7	70·3	·741	7·9	3·5	70	520	90·2	71·7	60·1	·520	5·5	9·1	37	511	0	0·00
July	30·546	30·245	0·301	30·445	30·358	0·087	30·401	104·0	67·0	37·0	99·1	70·7	28·4	84·9	85·1	79·1	75·2	·876	9·2	3·6	72	514	93·1	80·2	72·4	·792	8·3	8·0	51	505	0	0·00
August	30·541	30·205	0·336	30·423	30·331	0·092	30·377	112·0	69·0	43·0	102·0	74·4	27·6	88·2	88·3	81·2	76·7	·918	9·7	4·5	69	510	95·7	82·4	74·5	·850	8·9	8·7	51	502	0	0·00
September	30·646	30·310	0·336	30·534	30·446	0·088	30·490	105·0	64·0	41·0	95·4	70·3	25·1	82·8	81·5	76·3	72·8	·807	8·6	2·9	76	519	90·1	76·2	67·5	·671	7·1	7·7	47	510	0	0·00
October	30·844	30·433	0·411	30·683	30·576	0·107	30·629	102·0	57·0	45·0	92·7	66·3	26·4	79·5	80·0	68·0	59·8	·513	5·5	5·5	50	525	86·2	70·1	59·6	·511	5·4	7·9	43	517	0	0·00
November	30·931	30·483	0·448	30·771	30·679	0·092	30·725	89·0	50·0	39·0	77·1	56·1	21·0	66·6	68·4	62·1	57·2	·468	5·2	2·4	66	538	72·2	63·9	57·7	·478	5·2	3·8	60	533	9	4·64
December	30·988	30·478	0·510	30·807	30·736	0·071	30·772	82·0	44·0	38·0	73·6	53·3	20·3	63·4	63·7	58·1	53·4	·409	4·6	2·0	70	544	64·3	61·3	58·8	·498	5·5	1·2	82	542	6	3·77
Means	30·809	30·334	0·475	30·633	30·552	0·081	30·592	93·2	51·8	41·3	82·7	59·4	23·3	71·1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	sum. 52	sum. 18·75
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32

WHAT WAS THE DATE OF THE YEAR OF THE CRUCIFIXION ?

By Edward Pearson.

Has this question ever been considered in the light of the following statements :—

1. That Jordan overfloweth all its banks all the time of harvest.

2. Then when the Israelites crossed on the 10th day of the first month, the overflow was in full force.

3. That the Passover is held on the 14th day of the first month.

4. That Jesus reached Bethany six days before the Passover, *i.e.*, on the 8th day of the first month.

5. That apparently the night before, he lodged at Zacchaeus' house.

6. That apparently he crossed Jordan and entered Jericho the day before that.

7. From this we may gather that in that year, on the 6th day of the first month, Jordan was *not* overflowing all his banks.

8. The question then arises, was it a very early Passover in the year of the Crucifixion ?

9. We are told that the eve of the Crucifixion the night was cold.

10. It should not be difficult to ascertain how the new moons fell about A.D. 33.

RESULTS OF METEOROLOGICAL OBSERVATIONS TAKEN AT TIBERIAS IN THE YEAR 1896.

By James Glaisher, F.R.S.

The numbers in column 1 of this table show the highest reading of the barometer in each month ; the highest appear in the winter, and the lowest in the summer months ; the maximum for the year was 31·109 inches, in February, and the next in order 31·023 inches, in January.

In column 2 the lowest reading in each month is shown ; the minimum for the year was 30·205 inches, in August ; and the next in order 30·228 inches, in March.

The range of readings in the year was 0·904 inch. The range in the morning observations was 0·876 inch, being 0·175 inch greater than the range at Jerusalem.

The numbers in the 3rd column show the extreme range of readings in each month ; the smallest was 0·301 inch, in July, and the next in order 0·336 inch, in both August and September ; the largest was 0·690 inch, in January, and the next in order 0·682 inch, in February.

The numbers in columns 4 and 5 show the mean monthly reading of the barometer at 8 a.m. and 4 p.m.; and those in column 6 the lower reading at 4 p.m. than at 8 a.m.; the smallest difference between these two readings was 0·050 inch, in January, and the next in order 0·059 inch, in February; the largest was 0·107 inch, in October; and the next in order 0·098 inch, in June. In England in January the readings at 8 a.m. and 4 p.m. are practically the same; in all other months the reading at 4 p.m. is lower than at 8 a.m.; the greatest difference is 0·025 inch, in June. The mean for the year at Tiberias was 0·081 inch, being about four times greater than in England.

The numbers in the 7th column show the mean monthly pressure of the atmosphere; the highest was 30·791 inches, in February, and the next in order 30·772 inches, in December; the lowest was 30·377 inches, in August, and the next in order 30·401 inches, in July. The mean for the year was 30·592 inches.

The highest temperature of the air in each month is shown in column 8. The first day in the year the temperature reached 90° was on April 3rd, and there were 3 other days in April when the temperature reached or exceeded 90°; in May, 10 days; in June, 23 days; in July and August it reached or exceeded 90° on every day; in September, 28 days; and in October, 22 days; thus the temperature reached or exceeded 90° on 149 days during the year. At Jerusalem the temperature did not reach 90° till June 4th, and there were only 29 days in the year on which the temperature was as high as 90°. At Tiberias the temperature was 100° on June 11th, and reached or exceeded 100° on 4 other days in this month; in July, 14 days; in August, 26 days, and in September 1 day; thus on 46 days in the year the temperature reached or exceeded 100°. At Jerusalem there were only 3 days of this temperature, viz., August 13th, 14th, and 15th. The highest temperature in the year at Tiberias was 112°, on August 13th; at Jerusalem it was 103° on August 14th.

The lowest temperature of the air in each month is shown in column 9. The lowest in the year was 34°, on January 31st. The next lowest was 37°, on January 30th; and from February 1st to the end of the year there was no temperature so low as 37°; the nearest approach being 40°, on both February 4th and 19th; thus the temperature was as low or lower than 40° on only 4 nights during the year. At Jerusalem the lowest in the year was 28°, on January 31st; and there were 61 nights in the year when the temperature was as low or lower than 40°.

The yearly range of temperature was 78°; at Jerusalem it was 75°.

The range of temperature in each month is shown in column 10; and these numbers vary from 34° in both January and March, to 52° in both April and June. At Jerusalem the range varied from 29° in January, to 49° in April.

In column 11 the mean of all the high day temperatures in each month is shown. The lowest was 61°·6 in January, being 11°·8 higher than that at Jerusalem; the next in order were 62°·2 in February, and 68°·6 in

March ; the highest was 102° in August ; and the next in order 99°·1 in July, and 95°·4 in September. At Jerusalem the lowest were 49°·8 in January, 52° in February, and 58° in March ; the highest were 91°·3 in August, 86°·7 in July, and 84°·5 in September. The mean for the year at Tiberias was 82°·7 ; at Jerusalem it was 71°·5.

In column 12 the mean of all the low night temperatures in each month is shown. The lowest was 45°·8 in January, the next in order were 47°·7 in February, and 47°·9 in March ; the highest was 74°·4 in August, and the next in order were 70°·7 in July, and 70°·3 in September. At Jerusalem the lowest were 37°·9 in January, 38°·6 in February, and 42°·2 in March ; the highest were 69°·5 in August, 65°·4 in July, and 63°·5 in September. At Tiberias the yearly value was 59°·4 ; at Jerusalem it was 54°·3.

In column 13 the mean daily range of temperature is shown in each month ; the smallest was 14°·5 in February, the next in order were 15°·8 in January, and 20°·3 in December ; the greatest was 30° in June, and the next in order were 28°·4 in July, and 27°·6 in August. At Jerusalem the smallest were 11°·6 in December, 11°·9 in January, and 13°·4 in February ; the greatest were 21°·8 in August, 21°·3 in July, and 21°·1 in June. At Tiberias the mean daily range for the year was 23°·3 ; at Jerusalem it was 17°·2.

The mean temperature of the air, as found from the maximum and minimum temperatures only, is shown in each month in column 14. The lowest was 53°·7 in January, and the next in order were 55° in February, and 58°·3 in March ; the highest was 88°·2 in August, and the next in order were 84°·9 in July, and 82°·8 in September. At Jerusalem the lowest temperatures were 43°·8 in January, 45°·3 in February, and 50°·1 in March ; the highest were 80°·4 in August, 76° in July, and 74° in September. At both Tiberias and Jerusalem the mean temperature increased month by month to the maximum in August, then decreased month by month to the end of the year. At Tiberias the yearly value was 71°·1 ; at Jerusalem it was 62°·9.

The numbers[1] in the 15th and 16th columns are the mean readings of a dry and wet-bulb thermometer, taken daily at 8 a.m. If those in column 15 be compared with those in column 14, it will be seen that those in column 15 were a little higher in March, June, July, August, October, November, and December, and a little lower in the remaining months. In the year 1890 the mean of the dry-bulb was 1°·1 lower than that of the maximum and minimum thermometers ; in 1891 it was 1°·5 lower ; in 1892, 0°·4 higher ; in 1893, 0°·7 lower ; in 1894, 0°·5 lower ; and in 1895 0°·1 lower ; the mean of the six differences is 0°·6 ; and therefore

[1] In a letter from Dr. Torrance, he states that on December 12th, 1895, during a storm, the thermometer house was overturned and the dry bulb and maximum thermometers were broken. During 1896, instead of the dry bulb thermometer, the bulb of the maximum thermometer was used ; consequently all the hygrometrical deductions of 1896 are approximate only.

the mean temperature of the year may be approximately determined by a single reading of the thermometers taken daily at 8 a.m.

The numbers in the 17th column are the temperature of the dew-point, or that temperature at which the air would be saturated by the quantity of vapour mixed with it; the smallest difference between these numbers and those in column 15 was 4°·4 in March, and the largest 11°·6 in September.

The numbers in column 18 show the elastic force of vapour, or the length of a column of mercury in inches corresponding to the pressure of vapour; the smallest was 0·346 inch in February, and the largest 0·918 inch in August.

In column 19 the weight in grains of the water in a cubic foot of air is shown; it was as small as 3·9 grains in February, and as large as 9·7 grains in August.

In column 20 the additional quantity of water required to saturate a cubic foot of air is shown; it was as small as 0·7 grain in February, and as large as 4·5 grains in August.

The numbers in column 21 show the degree of humidity of the air, saturation being represented by 100; the largest number is 86 in March, and the smallest 50 in October.

The numbers in column 22 show the weight in grains of a cubic foot of air, under the mean atmospheric pressure, temperature, and humidity of the air; the largest number was in February, decreasing to the smallest in August, then increasing to the end of the year.

In columns 23 and 24 are the mean readings of a dry and wet-bulb thermometer taken daily at 4 p.m. By comparing the numbers in column 15 with those in column 23, the increase of temperature from 8 a.m. to 4 p.m. is shown; in December the increase was only 0°·6, and in May it was as much as 9°·8.

In column 25 the temperature of the dew point at 4 p.m. is shown. By comparing these numbers with those in column 17, it will be seen that the temperature of the dew point in the months of February, April, November, and December was higher than at 8 a.m., and lower than at 8 a.m. in the remaining months. The numbers in this column are smaller than those in column 23, by 8°·4 in February, increasing to 30°·1 in June, decreasing to 5°·5 in December; these differences between the temperature of the air and that of the dew point are very much larger than those at 8 a.m., being in several months more than twice as large.

On several days during the months of May, June, July, September, and October, at 4 p.m., the reading of the dry-bulb thermometer exceeded that of the wet by 20° or more, and the temperature of the dew point was from 32°·3 to 39°·7 lower than the temperature of the air, as shown by the following table :—

Month and Day.	Reading of		Temperature of the Dew Point.	Temperature of the Dew Point below Dry.
	Dry.	Wet.		
	°	°	°	°
May 7 .. .	90·0	69·0	55·8	34·2
8	95·0	73·0	59·8	35·2
30	93·0	72·0	59·2	33·8
June 12	106·0	81·0	67·5	38·5
13 ..	106·0	83·0	70·6	35·4
30	106·0	82·0	69·0	37·0
July 25	101·0	80·0	68·0	33·0
Sept. 19	92·0	72·0	59·7	32·3
Oct. 10	96·0	71·0	56·3	39·7
17	83·0	62·0	48·0	35·0
19	87·0	66·0	52 5	34·5
24	87·0	66·0	52·5	34·5
27	87·0	66·0	52·5	34·5

In column 26 the elastic force of vapour is shown, and by comparing the values with those in the same month at 8 a.m. we find that it was smaller at 4 p.m. in March, and in the months from May to October, and larger than at 8 a.m. in the remaining months.

In column 27 the amount of water in a cubic foot of air at 4 p.m. is shown, and the amount was less than at 8 a.m. in March, and in the months from June to October, of the same value in November, and larger than at 8 a.m. in the other months.

In column 28 the amount of water required to saturate a cubic foot of air was as large as 9·1 grains in June, 8·7 grains in August, and 8 grains in July; and smaller than 2 grains in both February and December.

In column 29 the degree of humidity is shown; the driest months are from May to October, the value for these months varying from 37 in June, to 51 in both July and August.

In column 30 the weight of a cubic foot of air is shown; the smallest was 502 grains, in August, and the largest 549 grains, in February.

In column 31 are given the number of days of rain in each month; the greatest number was 12, in February. The total number in the year was 52. At Jerusalem rain fell on 71 days.

In column 32 the monthly fall of rain is given. The heaviest fall of rain on one day in the months from January to April was 0·64 inch, on February 16th; and the next in order 0·60 inch, on both February 18th and April 8th. No rain fell from April 9th till November 14th, making a period of 218 consecutive days without rain. The fall of rain on November 29th was 1·22 inch, and on November 30th and December 1st 1·12 inch and 2·10 inches fell respectively. The heaviest monthly fall in

the year was 4·64 inches, in November, and the next in order, 4·03 inches, in February. The total fall for the year was 18·75 inches. At Jerusalem the total fall for the year was 32·90 inches.

RESULTS OF METEOROLOGICAL OBSERVATIONS TAKEN AT JERUSALEM IN THE YEAR 1896.

By James Glaisher, F.R.S.

The numbers in column 1 of this table show the highest reading of the barometer in each month; of these the highest, as usual, are in the winter, and the lowest in the summer months; the maximum for the year was 27·671 inches, in December, and the next in order, 27·656 inches, in November. The highest reading in the preceding 35 years, viz., 1861 to 1895 inclusive, was 27·816 inches, in December, 1879.

In column 2 the lowest reading of the barometer in each month is shown; the minimum for the year was 26·970 inches, in March, and the next in order, 27·036 inches, in January. The lowest reading in the preceding 35 years was 26·972 inches, in April, 1863, and February, 1865.

The numbers in the 3rd column show the extreme range of readings in each month; the smallest was 0·222 inch, in July, and the next in order, 0·223 inch, in June; the largest was 0·562 inch, in January; and the next in order, 0·468 inch, in each of the months of February, March, and April. The mean monthly range for the year was 0·356 inch. The mean for the preceding 35 years was 0·309 inch.

The range of barometer readings in the year was 0·701 inch. The largest range in the preceding 35 years was 0·742 inch, in 1872; and the smallest, 0·491 inch, in 1883.

The numbers in the 4th column show the mean monthly pressure of the atmosphere; the highest was 27·494 inches, in December, and the next in order, 27·482 inches, in November; the lowest was 27·289 inches, in July, and the next in order, 27·300 inches, in March. The mean yearly pressure was 27·379 inches. The highest mean yearly pressure in the preceding 35 years was 27·443 inches, in 1861, and the lowest, 27·357 inches, in 1894. The mean for the 35 years was 27·389 inches.

The temperature of the air reached 90° on June 4th, and there were 3 other days in June when the temperature reached or exceeded 90°. In the preceding 14 years the earliest day in the year the temperature was 90° was March 25th in the year 1888; in July it reached or exceeded 90° on 6 days; in August, on 17 days; and in September, on 2 days, the 29th being the last day in the year of a temperature as high as 90°. In the preceding 14 years the latest day in the year this temperature reached 90° was October 23rd, 1887. The temperature reached or exceeded 90° on 29 days during the year. In the year 1892

(*To face p.* 66.)

MONTHLY METEOROLOGICAL TABLE

Deduced from observations taken at Jerusalem, by JOSEPH GAMEL, in a garden, well within the city, about 2,500 feet above the level of the Mediterranean Sea, open on all sides.
Latitude, 31° 46′ 40″ N., Longitude, 35° 13′ 30″ E.

Months.	Pressure of atmosphere in month—Corrected to 32° Fahrenheit.				Temperature of the air at 9 a.m.							Mean reading at 9 a.m.			Vapour at 9 a.m.			Degree of humidity.	Weight of a cubic foot of air.	Wind. Relative proportions of.								Mean amount of cloud.	Rain.	
	Highest.	Lowest.	Range.	Mean.	Highest.	Lowest.	Range.	Mean of all highest.	Mean of all lowest.	Mean daily range.	Mean.	Dry bulb.	Wet bulb.	Dew point.	Elastic force of vapour.	Weight in a cubic foot of air.	Additional weight required for saturation.			N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.		Number of days on which it fell.	Amount collected.
1896.	in.	in.	in.	in.	°	°	°	°	°	°	°	°	°	°	in.	grs.	grs.	°	grs.										in.
January	27·598	27·036	0·562	27·365	57·0	28·0	29·0	49·8	37·9	11·9	43·8	45·0	43·6	42·0	·266	3·1	0·4	89	502	0	4	2	3	1	15	3	3	7·4	19	9·61
February	27·620	27·152	0·468	27·450	68·0	30·0	38·0	52·0	38·6	13·4	45·3	48·0	45·0	41·7	·263	3·0	0·8	79	491	1	3	3	1	0	7	3	11	6·4	12	8·65
March	27·438	26·970	0·468	27·300	68·0	36·0	32·0	58·0	42·2	15·8	50·1	52·1	49·3	46·4	·316	3·6	0·8	81	494	2	1	1	4	1	5	6	11	7·1	14	5·50
April	27·594	27·126	0·468	27·380	85·0	36·0	49·0	66·4	49·1	17·3	57·8	60·7	54·5	49·1	·349	3·9	2·1	66	487	0	5	1	5	0	2	4	13	5·9	6	2·14
May	27·481	27·120	0·361	27·345	89·0	47·0	42·0	76·8	57·5	19·3	67·2	69·1	58·0	49·3	·352	3·9	3·9	50	478	1	3	1	8	0	2	7	9	5·3	3	0·42
June	27·443	27·220	0·223	27·334	98·2	52·0	46·2	82·4	61·3	21·1	71·9	75·6	61·0	50·5	·369	3·9	5·6	42	472	2	5	0	2	0	0	4	17	0·3	0	0·00
July	27·375	27·153	0·222	27·289	97·8	59·0	38·8	86·7	65·4	21·3	76·0	78·4	64·1	54·2	·421	4·5	5·9	43	469	1	1	1	2	0	5	4	17	1·1	0	0·00
August	27·439	27·212	0·227	27·303	103·0	62·5	40·5	91·3	69·5	21·8	80·4	81·8	67·9	58·5	·493	5·3	6·3	45	466	1	1	2	0	0	0	3	24	1·0	0	0·00
September	27·491	27·266	0·225	27·355	91·8	56·0	35·8	84·5	63·5	21·0	74·0	75·1	65·2	58·1	·484	5·3	4·2	55	482	1	1	1	0	0	6	3	18	2·1	0	0·00
October	27·589	27·357	0·232	27·453	89·0	56·0	33·0	81·0	63·1	17·9	72·0	73·8	59·3	48·7	·368	4·0	5·0	44	476	3	9	4	1	0	2	1	11	2·3	2	0·04
November	27·656	27·282	0·374	27·482	77·8	47·0	30·8	67·7	54·0	13·7	60·8	62·9	54·4	47·1	·324	3·6	2·8	60	486	0	11	4	2	0	4	1	8	3·8	9	2·08
December	27·671	27·226	0·445	27·494	72·0	39·5	32·5	61·3	49·7	11·6	55·5	56·6	49·6	43·1	·280	3·2	2·0	61	493	0	12	4	2	1	5	2	5	4·3	6	4·46
Means	27·533	27·177	0·356	27·379	83·1	45·8	37·3	71·5	54·3	17·2	62·9	64·9	56·0	49·1	·357	3·9	3·3	60	483	sum. 12	sum. 56	sum. 24	sum. 30	sum. 3	sum. 53	sum. 41	sum. 147	3·9	sum. 71	sum. 32·90
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

the number of days of this high temperature was 23, and in 1887 was 73; the average of the 14 years was 39. The highest temperature in the year was 103°, on August 14th; the highest in the preceding 14 years, viz., 1882 to 1895, was 108°, in June, 1894.

The temperature of the air was as low as 28° on January 31st, and was as low or lower than 40° on 20 other nights in January; in February on 20 nights; in March on 15 nights; in April on 4 nights; and in December on 1 night. Thus the temperature was as low or lower than 40° on 61 nights during the year. In the year 1892 the number of nights of this low temperature was 19, and in 1894 was 113; the average for the 14 years was 55.

The highest temperature of the air in each month is shown in column 5. In January it was 57°, being the lowest in the year, and 3°·6 below the mean of the 14 high day temperatures in January. The high day temperature was also below its average in March, May, September, and October, and above in the remaining months. The mean for the year was 83°·1, being 0°·9 below the average of 14 years.

The lowest temperature of the air in each month is shown in column 6. In January it was 28°, being the lowest in the year, and 3°·5 below the average. The low night temperature was also below its average in February, April, and June, and above in the remaining months. The mean for the year was 45°·8, being 1°·5 above the average of 14 years.

The range of temperature in each month is shown in column 7; the numbers vary from 29° in January to 49° in April. The mean range for the year was 37°·3, being 2°·4 less than the average of 14 years.

The range of temperature in the year was 75°. The largest in the preceding 14 years was 81°, in 1894; and the smallest, 63°·5, in the year 1885.

The mean of all the high day temperatures in each month is shown in column 8. The lowest was 49°·8, in January, being 1°·3 lower than the average. The highest was 91°·3, in August, being 2°·1 higher than the average. The mean for the year was 71°·5, being 0°·7 below the average of 14 years.

The mean of all the low night temperatures in each month is shown in column 9. The lowest was 37°·9, in January, being 0°·3 lower than the average; the highest was 69°·5, in August, being 6° higher than the average. The mean for the year was 54°·3, or 2°·1 above the average of 14 years.

In column 10 the mean daily range of temperature in each month is shown; the smallest was 11°·6, in December; and the next in order, 11°·9, in January; the greatest was 21°·8, in August, and the next in order 21°·3, in July. The mean for the year was 17°·2, being 2°·8 less than the average. The smallest ranges in the preceding 14 years were 9°·3, in January, 1883, and 9°·7, in December, 1890; the greatest were 33°·8, in August, 1886; and 30°·1, in the same month of 1887. The smallest mean for the year was 17°·8, in 1883; and the greatest, 24°·3, in 1886.

The mean temperature of the air, as found from the maximum and

minimum temperatures only, is shown in each month in column 11 ; the lowest was 43°·8, in January ; and the next in order, 45°·3, in February ; the highest was 80°·4, in August ; and the next in order, 76°, in July. The mean for the year was 62°·9, being 0°·7 above the average of 14 years. The lowest mean temperatures in the preceding 14 years were 39°·8, in January, 1890 ; and 42°, in December, 1886 ; the highest were 81°·2, in August, 1890, and 81°·1, in July, 1888. The highest mean for the year was 63°·7, in 1885, and the lowest, 60°, in 1894.

January was the coldest month of the year, and was below its average both by day and night.

The numbers in column 12 are the mean readings of a dry-bulb thermometer. If those in column 12 be compared with those in column 11, it will be seen that those in column 12 are a little higher in every month, the difference of the means for the year being 2°·0 ; the mean difference between the mean temperature of the air and that at 9 a.m. for the 14 years was 3°·5.

For a few days in the winter months the dry and wet-bulb thermometers read alike, or nearly so, but in the months from May to October the difference between the readings often exceeded 15°, and was as large as 29° on May 8th.

In column 13 the mean monthly readings of the wet-bulb are shown ; the smallest differences between these and those of the dry-bulb were 1°·4, in January, and 2°·8, in March ; the largest were 14°·6, in June, and 14°·5, in October. The mean for the year was 56°·0, and that of the dry-bulb 64°·9 ; the mean difference was 8°·9.

The numbers in column 14 are the mean temperature of the dew point, or that temperature at which the air would be saturated by the quantity of vapour mixed with it ; the smallest difference between these numbers and those in column 12, were 3°, in January, and 5°·7, in March ; and the largest were 25°·1, in both June and October, and 24°·2, in July. The mean temperature of the dew point for the year was 49°·1 ; the mean for the 13 years was 50°·3.

The numbers in column 15 show the elastic force of vapour, or the length of a column of mercury in inches corresponding to the pressure of vapour ; the smallest was 0·263 inch, in February ; and the largest 0·493 inch, in August. The mean for the year was 0·357 inch ; the average of the 14 years was 0·377 inch.

In column 16 the weight in grains of the water present in a cubic foot of air is shown ; it was as small as 3 grains in February, and as large as 5·3 grains in both August and September. The mean for the year was 3·9 grains ; the average of 14 years was 4·2 grains.

In column 17 the additional quantity of water required to saturate a cubic foot of air is shown ; it was as small as 0·4 grain in January, and as large as 6·3 grains in August. The mean for the year was 3·3 grains, the average of 14 years being of the same value.

The numbers in column 18 show the degree of humidity, saturation being represented by 100 ; the largest numbers appear in January,

February, March, April, November, and December, and the smallest from May to October; the smallest of all was 42 in June. The mean for the year was 60; that of the 14 years was 59.

The numbers in column 19 show the weight in grains of a cubic foot of air, under its mean atmospheric pressure, temperature, and humidity. The largest number was in January, decreasing to the smallest in August, then increasing to December. The mean for the year was 483 grains; that of the 14 years was 482 grains.

The most prevalent wind in January was S.W., and the least prevalent was N.; the most prevalent in February were N.W. and S.W., and the least was S.; the most prevalent in March was N.W., and the least prevalent were N.E., E., and S.; the most prevalent in April was N.W., and the least were N. and S.; the most prevalent in May were N.W., S.E., and W., and the least was S.; the most prevalent in June was N.W., and the least were E., S., and S.W.; the most prevalent in July was N.W., and the least was S.; the most prevalent in August was N.W., and the least were S.E., S., and S.W.; the most prevalent in September was N.W., and the least were S.E. and S.; the most prevalent in October were N.W. and N.E., and the least was S.; the most prevalent in November were N.E. and N.W., and the least were N. and S.; the most prevalent in December was N.E., and the least was S. The most prevalent wind in the year was N.W., which occurred on 147 times, of which 24 were in August, 18 in September, and 17 in both June and July, and the least prevalent wind was S., which occurred on only 3 times during the year, viz., once in each of the months of January, March, and December.

The total number of times of each wind are shown in the last line of columns 20 to 27; the S.W. wind was of the same value as the average; those winds less in number than the average of the preceding 14 years were—

N.	by	16
E.	„	6
S.	„	7
W.	„	25

and those winds greater in number than the average of 14 years were—

N.E.	by	15
S.E.	„	5
N.W.	„	34

The numbers in column 28 show the mean amount of cloud in each month; the month with the smallest amount is June, and the largest January. Of the cumulus or fine weather cloud there were 12 instances; of the nimbus or rain cloud there were 30 instances, of which 9 were in January, 6 in February, and 5 in March; of the cirrus 12 instances; of the cirro cumulus 80 instances; of the cirro stratus 11 instances; of the cumulus stratus 58 instances; of the stratus 3 instances; and

160 instances of cloudless skies, of which 29 were in June, 25 in July, and 23 in August, and 2 only in January.

The largest fall of rain for the month in the year was 9·61 inches, in January, of which 2·15 inches fell on the 16th, 1·82 inch on the 25th, and 1·75 inch on the 1st. The next largest fall for the month was 8·65 inches, in February, of which 2·40 inches fell on the 19th, 1·73 inch on the 20th, and 1·26 inch on the 3rd. No rain fell from May 21st till October 16th, making a period of 147 consecutive days without rain. The total fall of rain for the year was 32·90 inches, being 7·28 inches above the average of 35 years, viz., 1861 to 1895. The number of days on which rain fell was 71, being 16 more than the average.

ERRATUM.

A subscriber writes that in Mr. Brown's article on the "Construction of the Tabernacle," in the *Quarterly Statement* for July, 1897, there is an inaccuracy, which, however, does not in the least detract from the force of his argument. He says, page 155 :—"Each of the 96 *boards* of the Tabernacle rested on *a* silver socket weighing a talent." A reference to Exodus xxvi, 15–23, will show wherein the error consists.

THE
PALESTINE EXPLORATION FUND.

NOTES AND NEWS.

The Committee have heard with deep regret of the death of Mr. C. W. M. Van de Velde, who, in the year 1851, undertook, unaided and at his own cost, the task of producing a reliable map of the Holy Land. Mr. J. D. Crace, a member of the Executive Committee, thus writes of him :—

"He was a Lieutenant in the Dutch Navy. What led to his going to Palestine and devoting himself to a survey of that country I do not know ; but he did devote himself and all his private means to that object. The result was a map of about $\frac{1}{3}$ inch to a mile, accompanied by sections showing the altitudes through several lines, and was by far the best and most complete map of Palestine until our own survey was accomplished. His was done by himself *alone* and *entirely at his own cost.* Our own came just in time to cut off any considerable return to him by his publication of the great work of his life ; yet he has never shown any jealousy or resentment. Mr. Van de Velde was, fortunately, an accomplished artist as well as a skilled surveyor, and for the last 25 or 30 years has supplemented what means remained to him by his beautiful water-colour paintings -most delicate, highly-finished drawings, generally of the scenery of the Riviera, Corsica, &c. These he used to bring to England and show privately every season. He had many English friends. He was a man of very gentle, courteous, and modest disposition, very responsive to any kindness, and of deeply religious feeling ; small of stature, of alert figure, and clear-cut features ; in manner very quiet, very simple. He spoke English perfectly."

The *Times* of March 24th has the following :—

"The death is announced from Mentone of Mr. C. W. M. Van de Velde, a distinguished Dutchman, who expired there on the 20th instant, after an illness of about three months' duration. Born in 1818, in Friesland, he entered the Royal Dutch Navy at an early age, serving in Java and the East Indian Archipelago, where his great ability as a cartographer caused him to

be appointed to the hydrographical office at Batavia. Besides a large map of Java he published a folio work entitled 'Gezichten van Niederlansch Indie,' copiously illustrated with views of the Dutch possessions there. On returning to Europe, and impelled thereto by his deeply religious nature, he engaged in the formidable task of mapping Palestine single-handed. Nothing daunted by a failure to obtain help in England, he set out alone on his surveying expedition in December, 1851, achieving by indomitable industry and perseverance such success that those engaged in later years by the Palestine Exploration Fund in a more minute survey frankly admitted the complete exactitude of all that Van de Velde had done. The result of his labours and travels in the Holy Land was published by Messrs. Blackwood in 1854-55, while his map of Palestine was issued in 1857 by Justus Perthes, Gotha. The French Government, in recognition of his merit, had previously made him a Chevalier of the Legion of Honour. He was widely known and appreciated as an artist, not only in his own country, but also in England, France, and Germany, his delicate and truthful water-colour sketches being much admired. His original survey of the Holy Land he presented to the Palestine Exploration Fund some time since."

The Committee are still awaiting the Firman for continuing the excavations. As soon as it arrives the work will be recommenced.

The office of the Fund is now established in the new premises at 38, Conduit Street (a few doors from Bond Street), where the Museum is open to visitors every week-day from 10 o'clock till 5, except Saturdays, when it is closed at 2 p.m.

Dr. Bliss's detailed account of his three years' work at Jerusalem is now in the press, and will be published shortly as a separate volume, with the title "Excavations at Jerusalem, 1894–1897." The book will be copiously illustrated by maps and plates.

Dr. Masterman writes from Damascus, on February 3rd:—"We have had the most extraordinary weather here of late. For seven days we received no post, through the railway line being completely blocked with snow in the Lebanon. One train from Beyrout was almost buried, and the passengers suffered the greatest privations. It took upwards of 500 men seven days' hard work to dig out the train, and get the line clear again. You will also be interested to hear that the extension of the line from Beirut to Tripoli is being rapidly pushed on. The new line will start from the same railway station as the Damascus one. I believe it now reaches nearly half-way to Tripoli. The railway here has just changed hands, the original company having found it impossible to work it on the expensive lines on which it was begun. It is now to be worked much more cheaply; especially is reduction to be made in the expenses of the French staff, who have so far been receiving very large salaries in proportion to the smallness of the railway. The Hauran trains now only run three days a week."

The Rev. J. E. Hanauer writes:—"The bas-relief observed at Mejdel, and described in the *Quarterly Statement* for January, 1897, p. 33, has turned out to be Byzantine, and is interesting as a small but exceedingly well-preserved specimen of the works of art with which, according to Chorikios, of Gaza—(or Chorícius, A.D. 520)—his native city and other cities on the Philistian coast were adorned, and for a full description of which I may refer those whom the subject may interest to Dr. K. B. Stark's 'Gaza, und die philistäische Küste,' Jena, 1852, pp. 598-611."

Professor R. Brunnow sends the following note:—

"Chalet Beauval, Vevey,
"January 16th, 1898.

"I find in the January number of the *Quarterly Statement*, p. 33, a short notice on Greek inscriptions from Jerash. The two first fragments belong, as Dr. Thompson supposes, to the same inscription which both I and my friend Prof. von Domaszewski, saw in a complete condition on the occasion of our visit to Jerash last April, when it had just been found. We did not take a squeeze as we were rather pressed for time and the letters were perfectly clear. This inscription, as well as several others, was published in the 'Mittheilungen und Nachrichten' of the German Palestine Society, 1897, No. 3, p. 39, of which I am sending you a copy. Perhaps you will kindly refer to it in the next number of the *Quarterly Statement*. It is much to be regretted that the inscriptions in the East Jordan country should not be taken better care of; I have no doubt that this almost perfect block was broken up very soon after we had been to Jerash, and probably if we had not happened to pass through at the time it would have been lost, with the exception of the fragments recovered by Dr. Thompson. The long and very perfect inscription published by Germer-Durand in the 'Revue Biblique,' 1895, p. 387, No. 30 (*θαμβος ὀμνι.*) has been broken in two, one half now serving as a lintel in a modern building.

"I should like particularly to call your attention to our reading of line 5 in the Kusr Bshêr inscription (*ib.*, p. 38). Germer-Durand reads (from a squeeze made by Dr. Bliss) CASTRA ET EORVM MŒNIA FOSSAMENTIS; but there is not the slightest doubt that our reading is the correct one. It is perfectly clear on the squeeze I made, and we both saw it distinctly on the stone. I may add that Prof. Domaszewski is one of the foremost Latin epographists."

The income of the Society, from December 21st, 1897, to March 26th, 1898, was—from annual subscriptions and donations, including Local Societies, £736 8*s.* 9*d.*; from Lectures, £20 1*s.* 4*d.*; from sales of publications, &c., £208 8*s.* 11*d.*; total, £964 19*s.* 0*d.* The expenditure during the same period was £645 7*s.* 3*d.* On March 28th the balance in the Bank was £999 15*s.* 2*d.*

Messrs. Blackwood are about to publish a new work by Lieut.-Colonel Conder, called "The Hittites and their Language." It treats of the history and civilisation of this people, and of the decipherment of the inscriptions

usually ascribed to them. It will be illustrated with copies of all the principal texts in this peculiar hieroglyphic script, amounting to upwards of seventy in all, found in Mesopotamia, Armenia, Asia Minor, and Syria.

The following gentlemen have kindly consented to act as Honorary Local Secretaries:—

Rev. John Holden, Mansfield House, 126, Unthanks Road, Norwich.
Rev. G. W. Thatcher, M.A., B.D., Mansfield College, Oxford.
A. Knight, Esq., Singapore, India.
Rev. George G. S. Thomas, Hornsea, near Hull.

Memo. for Subscribers to the Survey of Palestine.—In the original programme it was intended that the "Archæological Researches" of M. Clermont-Ganneau should be published in one volume, but the work increased so much since its commencement that the Committee found it necessary to arrange for the publication of the whole in two volumes. Vol. II has been published in advance for the reasons stated in the prefatory note.

Vol. I, which treats of Jerusalem and its neighbourhood, is now well forward, and, when ready, will be sent out to the first 250 Subscribers without any increase in their subscriptions for the full set.

The set consists of "The Survey of Eastern Palestine," by Lieut.-Colonel Conder, LL.D., R.E., in one vol.; "The Fauna and Flora of Sinai, Petra, and the Wâdy 'Arabah," by H. Chichester Hart, B.A., in one vol.; "The Archæological Researches," by Professor Clermont-Ganneau, in two vols. Four volumes in all.

There are only a few copies of the sets left at the price of £7 7*s*.

Lieut.-Colonel Conder's work, "The Latin Kingdom of Jerusalem"—1099 to 1292 A.D.—describing the condition of Palestine under the Crusaders, is based on the chronicles and contemporary accounts, both Christian and Moslem, and on the information collected during the progress of the Survey, with descriptions of the scenes of the important events, and other information not to be found in previous histories of the Crusades. It forms an octavo volume of over 400 pages, with two maps, giving the Crusading names and boundaries of the "Fiefs" throughout Palestine.

A translation of Behâ ed Dîn's "Life of Saladin," A.D. 1145-1232, forms the concluding volume of the Palestine Pilgrims' Text Series.

This translation has been compared with the original Arabic, and annotated by Lieut.-Colonel Conder, LL.D., R.E., with a preface and notes by Major-General Sir Charles Wilson, K.C.B., F.R.S., R.E.

Copies bound in cloth, with an index, *can be had separately*. Price to Subscribers to the Fund, 6*s*. 6*d*.

The price of a complete set of these translations, in 13 volumes, with general index, bound in cloth, is £10 10*s*. A catalogue describing the contents of each volume can be had on application to the Secretary, 38, Conduit Street.

Mr. George Armstrong's Raised Map of Palestine is on view at the office of the Fund. A circular giving full particulars about it will be sent on application to the Secretary.

The fourth edition of the new Collotype Print or Photo-relief from a specially prepared copy of the Raised Map of Palestine is now ready. Price to subscribers, 2*s.* 3*d.*; non-subscribers, 3*s.* 3*d.*, post free.

The print is on thin paper, measuring 20 inches by 28½ inches.

It may be well to mention that plans and photographs alluded to in the reports from Jerusalem and elsewhere cannot all be published, but all are preserved in the office of the Fund, where they may be seen by subscribers.

Branch Associations of the Bible Society, all Sunday Schools within the Sunday School Institute, the Sunday School Union, and the Wesleyan Sunday School Institute, will please observe that by a special Resolution of the Committee they will henceforth be treated as subscribers and be allowed to purchase the books and maps (by application only to the Secretary) at reduced price.

The Committee have to acknowledge with thanks the following donations to the Library of the Fund :—

"La Crypte du Credo." By P. Léon Cré. From the Author.

"Recueil D'Archéologie Orientale," livraisons 18–23, tome ii. By Professor Ch. Clermont-Ganneau. From the Author.

The Committee will be glad to receive donations of Books to the Library of the Fund, which already contains many works of great value relating to Palestine and other Bible Lands. A catalogue of Books in the Library will be found in the July *Quarterly Statement*, 1893.

While desiring to give publicity to proposed identifications and other theories advanced by officers of the Fund and contributors to the pages of the *Quarterly Statement*, the Committee wish it to be distinctly understood that by publishing them in the *Quarterly Statement* they neither sanction nor adopt them.

In order to make up complete sets of the *Quarterly Statement* the Committee will be very glad to receive any of the back numbers.

Subscribers who do not receive the *Quarterly Statement* regularly are asked to send a note to the Secretary. Great care is taken to forward each number to those who are entitled to receive it, but changes of address and other causes occasionally give rise to omissions.

The Committee of the Palestine Exploration Fund desire to make clear that they have no book on their List of Publications called "Picturesque Palestine," nor is any person authorised to represent this book as published by the Society; nor has the Society any book-hawkers in its employment.

Tourists are cordially invited to visit the Loan Collection of "Antiques" in the Jerusalem Association Room of the Palestine Exploration Fund, opposite the Tower of David, Jerusalem. Hours: 8 to 12, and 2 to 6. Maps of Palestine and Palestine Exploration Fund publications are kept for sale.

Photographs of Dr. Schick's models (1) of the Temple of Solomon, (2) of the Herodian Temple, (3) of the Haram Area during the Christian occupation of Jerusalem, and (4) of the Haram Area as it is at present, have been received at the office of the Fund. Sets of these photographs, with an explanation by Dr. Schick, can be purchased by applying to the Secretary, 38, Conduit Street, W.

Application for Lectures should be addressed to the Secretary, 38, Conduit Street, W.

At p. 57 of the *Quarterly Statement* for January last the table of typical Siloam letters was printed without the requisite headings to the columns. It should be as follows:—

	Earlier Gems.	Later Gems.	Siloam Inscription.	Bar-Cochab Coins.
Aleph				
Zain				
Sade				
Goph				

STATEMENT OF RECEIPTS AND EXPENDITURE FOR THE YEAR ENDING 31st DECEMBER, 1897.

Receipts.

	£	s.	d.
To Balance in Bank 31st December, 1896—			
Net Balance £314 12 8			
Subscriptions paid in 1896 in advance for 1897 .. .. 45 11 2			
	360	3	10
Legacy left by the late Edward Cooper, Esq. ..	1,000	0	0
Donations and Subscriptions	2,008	5	4
Proceeds of Lectures	65	15	4
Sales of Books	534	2	11
Sales of Maps, Photographs, Casts, and Lantern Slides	228	6	7
	£4,196	14	0

Expenditure.

	£	s.	d.
By Exploration	832	15	8
Printing and Binding new Editions, including the *Quarterly Statement*	708	19	1
Maps, Lithographs, Illustrations, Photographs, Casts, Lantern Slides, &c.	391	14	8
Advertising, Insurance, Stationery, and Sundries	71	19	10
Postage of Books, Maps, Parcels, including the *Quarterly Statement*	136	7	5
Salaries and Wages..	391	15	10
Office Rent, Gas, and Coals	229	17	10
Liabilities paid off during the year	787	18	6
Subscriptions paid in 1897 in advance for 1898 .. .. £70 0 1			
Net Balance 575 5 1			
645 5 2			
Balance in Bank 31st December, 1897 596 14 10			
„ in hand 48 10 4	645	5	2
	£4,196	14	0

Examined and compared with Vouchers and Cash and Bank Books and found correct.

Walter Morrison, *Treasurer*.

TREASURER'S STATEMENT.

The total income of the Fund for the year 1897 was, from Donations and Subscriptions, £2,008 5*s.* 4*d.*; from Legacy by the late Edward Cooper, Esq., £1,000; from Lectures, £65 15*s.* 4*d*; from sales of publications, £762 9*s.* 6*d.* Total, £3,836 10*s.* 2*d.*

The expenditure on excavations at Jerusalem amounted to £832 15*s.* 8*d.* In June the Firman expired, and the excavations were closed. Immediately thereafter an application was made for permission to dig elsewhere, and the Committee are now waiting for this permission to continue the work.

The amount, £708 19*s.* 1*d.*, spent on printing, binding, &c., is increased this year by the publication of "Latin Kingdom of Jerusalem," "Saladin," and new editions of other works; it also includes the *Quarterly Statement*, which is sent free to every subscriber of 10*s.* 6*d.* and upwards. On the other side the sales of books amounted to £534 2*s.* 11*d.*, showing that there is a steady sale for both old and new books.

On maps, photographs, casts, &c., £391 14*s.* 8*d.* was spent; of this amount £228 6*s.* 7*d.* has been received back.

On advertising, insurance, stationery, &c., the sum of £71 19*s.* 10*d.* was spent.

The postage of books, maps, parcels, including the *Quarterly Statement*, cost £136 7*s.* 5*d.*

The management, including rent of office, amounted to £621 13*s.* 8*d.*

At the end of the year the liabilities were all cleared off. The Society is entirely free of debt, a period unique in the history of the Society since its foundation in 1865.

Assets.	£	*s.*	*d.*
Balance in Bank, December 31st, 1897	596	14	10
In hand	48	10	4
	£645	5	2
Stock of Publications in hand, Surveying Instruments, Show Cases, Furniture, &c.			
In addition there is the valuable library and the unique collection of antiques, models, &c.			

Liabilities.	£	*s.*	*d.*
Current Expenses.			

Walter Morrison, *Treasurer.*

REPORTS BY DR. CONRAD SCHICK.

I. *The Columbarium or Cistern east of Zion Gate.*—The new shops of which I reported several months ago, south of the Jewish quarter and east of the Zion Gate, are now approaching completion. They are built by the Armenian Convent, and opposite the newly-made road Moslems also are building shops, as the ground there belongs to them. This undertaking is without question a great improvement to this quarter, but I am sorry that the rubbish and made earth are not enough taken away—only to the level of the western street—so that the half-buried houses, into which one has to go down by stairs from the street, the level of the street being higher than the flat roofs of the houses, will remain so. They are inhabited always by Spanish Jews. The level of the road is 2,490 feet above the sea, and the rock there is, according to Sir Charles Warren's "Contours," in a line of 2,460 feet, hence 30 feet under the present surface. The foundations for these new buildings they put on rubbish, and only 10 feet deep.

The cistern, or (as Sir Charles Warren calls it) *columbarium*, recently broken in through an arch giving way, is east of these new shops, and in the inner angle of the Burj el Kibryt, it is a large underground building (*see* "Jerusalem" volume, Plate XXXVI), of which I enclose plan and section. It is 104 feet long, and averages 41 feet wide—viz., in the east 32 feet, and in the west 50 feet—and has in the centre a row of huge square piers, five in number, of unequal dimensions, becoming wider and wider from east to west, in conformity with the widening of the room towards the west, as the plan will show. They are 27 feet high, bearing arches, and half-circled tunnel-vaults on the southern and cross-vaultings on the northern row. A stair (bending twice) leads down from the top into the large room below; but the stair is now blocked up, and the entrance to the place is simply the well-mouth. Two other well-mouths are also shut up. The most curious feature is a number of deep recesses in the northern wall, in two rows, one above the other, and this seems to be the reason why Sir Charles Warren called the place a columbarium.

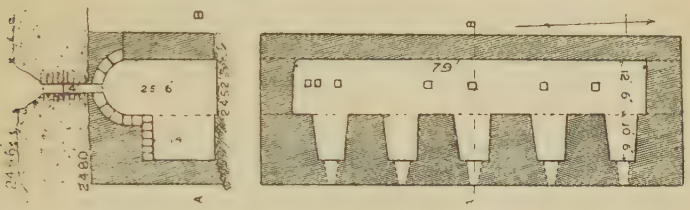
Neither in the "Jerusalem" volume, nor in the *Quarterly Statements*, nor in the "Recovery of Jerusalem" (London, 1871) could I find any description of it; but in Lewin's "Siege of Jerusalem" (London, 1863), p. 222, is the following:

"I found it 45 feet deep, and as some water was at the bottom, we still could not conceive what curiosities the well could contain. It was some time before the new ladder was brought, and we retired for shade into one of the embrasures of the wall. At length a second ladder made its appearance, and proved to be a very strong and substantial one, but it

was only 25 feet long. The two ladders, therefore, were spliced together and let down the well, and reached the bottom. A man was now sent down, and a plank let down after him. I was in hopes that the plank might have remained above, and the ladder be fastened to it; but no—one of the men held the end of the ladder in his hands and knelt upon it, and this was considered sufficient security. Mr. Barclay, who is quite an adept at diving into wells, was tied by the rope and descended, and soon shouted his arrival in the nether regions. The rope was then fastened round myself—not, as I expected, just under the arms, but about my middle, so that in case of accident I should have swung like the Golden Fleece. I got upon the ladder and descended also. For about the first 15 feet it was an ordinary well shaft, just large enough for a person to pass without difficulty, but after that I found myself in the air in the midst of a spacious cavern. On coming to the bottom, the man who was there ready hauled me, like a bale of goods at the end of a crane, on one side, and landed me upon the plank, which had been placed across the water. We now explored the subterranean abyss, and found it to be an enormous cistern. It was supported by massive pillars about 12 feet square. The roof was arched, and both roof and sides were, or had been, covered with cement. The ground, where free from water, was a fine black mould, gaping with great cracks. Here and there were recesses or cells on the side, and in one of them we found a skeleton. Some poor fellow had fallen or been thrown in, and had crept into this corner to die. At one end of the excavation was a gradual ascent, which had originally led to the light of day, but the earth had fallen in and choked it up. I observed here layers of Roman tiles, and, what I believe is not usual, the layers of tiles were equal in thickness to those of the stones. . . . . For what purpose was this ancient cistern made? Certainly for the mansion of some important personage, and in the time of the Herodian dynasty. This would appear also from the numerous tesseræ which we picked up on the surface above. I should imagine that the reservoir belonged to the house of the high priest Ananias, which, according to Josephus, stood on Mount Sion, and, so far as can be collected, on this part of it."

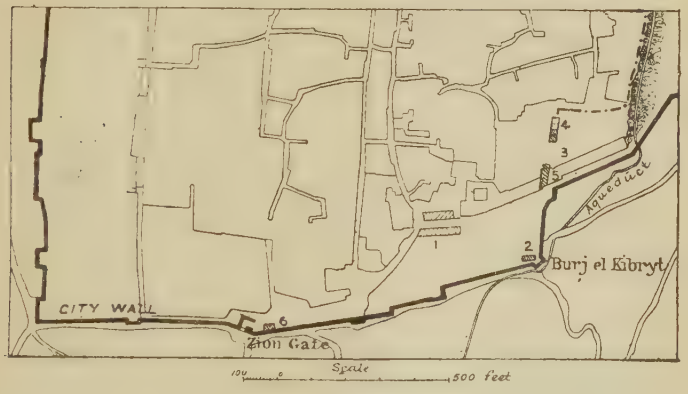
Some Jews told me that this place had been the school and synagogue of one of their celebrated heroes in learning. For such a purpose it was not lighted sufficiently, unless there were once windows in the walls and perhaps also in the roof—walled up when it was converted into a cistern. For a cistern it was originally not built, as the stair is too broad and wanted no recesses, so I think Sir Charles Warren is right in calling it a columbarium, and it seems to have been built with the idea to create further recesses in the spaces between the huge piers when the recesses were full, leaving a broad passage roundabout. That the place of the modern Burj el Kibryt was always an exposed and important one is shown by the aqueduct winding round it instead of going on straight; so any building here may date from remote times. During the last heavy rains the arches broke in, and there is now a deep sinking, so that no one is able to go down, except with much labour and care. For many years

all *débris* and earth, when removed, were cast there, so that the immense weight pressed the arching down—the more so, as already a few years ago (in 1888), when one of my friends went down he noticed an arch cracked west of the mouth.



Plan and Section of an Old Cistern.

II. *Another interesting Cistern.*—About 36 years ago the German Jewish community in Jerusalem bought a vacant piece of ground north-east of Burj el Kibryt, also along the city wall, with the intention to build houses there. In 1864–65, when the Ordnance Survey Plan of Jerusalem was made, already some new houses existed (marked 5 on general plan). A few years later, an old cistern was found, which I examined and measured at that time (*see* plan and section of this cistern made by me then). It is not so large as the former, but is also of great interest, having in its



General Plan.

eastern wall similar recesses, but larger. My impression at once was that it was a piece of an ancient city wall, and that the recesses had at their eastern ends loopholes, as I show with dotted lines in the plan, and that a wide and high passage—now the main part of the cistern—ran along there. The stones are large and nicely cut—even those of the tunnel archings, as shown in the section. The many square openings in the

roofing were at that time light-holes or sky windows. When it lost its value as a fortification it was converted into a cistern, and the prolongations of the passage were shut up, and also the sky windows except one, which was left for a mouth of the cistern. In this view I became confirmed on finding out and examining the following.

III. *Remains of an Ancient City Wall* (marked 4 on general plan).—When building was begun here they found old remains of large and nicely-hewn stones—a little chamber like one of the recesses in the cistern described above and the old building running exactly in a line with this cistern. They were obliged to destroy some parts of these old remains, which was a hard task, as they were very strong, and built them on the rest, without further foundations, whereas not many feet eastwards they had to dig down more than 40 feet.

Taking all this into consideration, one comes to the conclusion that we have in 2, 3, and 4 the line and the remains of a former city wall of the upper town towards the east, still on the height of the western brow of the Tyropœon Valley. It is most likely the continuation of the wall Dr. Bliss recently excavated from the Protestant burial-ground (plan, *Quarterly Statement*, 1895, p. 9; 1896, p. 109, and especially p. 208). From the point where the excavation was stopped the remains of the former wall will, by further excavations, be found west of the aqueduct running northward to the present city wall, or near to it,[1] and then eastward to Burj el Kibryt.

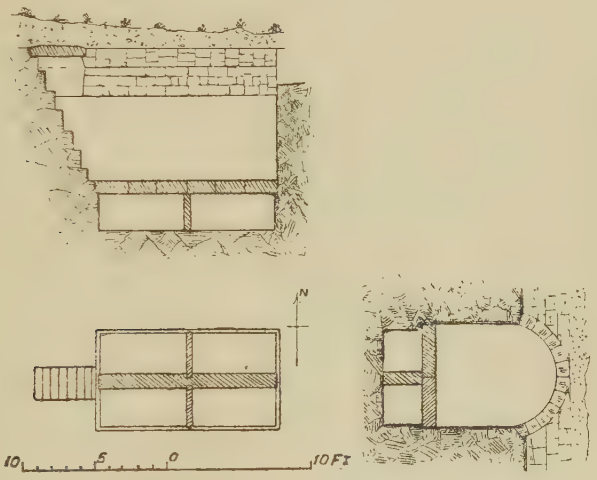
A short distance north of the cistern marked 4, the wall most likely turned towards the east for about 200 feet, and having there a similar tower like Burj el Kibryt, it turned northward, standing on the high and rocky ground of the western brow of the Tyropœon Valley, as I have shown on Plan A with dotted lines.

IV. About 40 years ago a new guard-house was built, a little east of Bab Neby Daud, inside the wall, which in course of time fell into decay. Recently it was restored, as the other guard-house, the so-called "Kalah," or fortress, standing at the place, where the new shops are built, had been removed.

V. *Another Rock-cut Tomb.*—In the *Quarterly Statement*, 1896, p. 306, are drawings and a description of a rock-cut tomb, found near the Tombs of the Kings, on which Colonel Conder makes some remarks in *Quarterly Statement*, 1897, p. 83, to which I wish to add one more, by submitting a plan and section of a similar rock-cut tomb found in 1870. It is also in north or north-west of Jerusalem, 1,830 feet distant from the Damascus Gate, on the south side of the Lifta road, and 90 feet east of the Neby Samwil road, and marked in Ordnance Survey Map as an "old cistern,"

[1] I think it ran to the southern wall of the large cistern, No. 1 on Plan B, as I have shown it with dotted lines there.

and this is repeated in the illustration plan, *Quarterly Statement*, 1895, p. 30, and the word "Tombs" erroneously put further in, at the place of an old cistern. It differs from the others spoken of, as it is arched over, with an opening like a well mouth at the west end, which gave the idea that it was a cistern. But when it was opened properly, a very steep stair, cut into the rock, was found leading down to an oblong rock-cut shaft, with right-angled corners, having four Christian tombs at its bottom, divided by a thin wall going along the centre and two



Plan and Sections of Rock-Cut Tomb.

stone slabs (*see* plan); the graves are of the usual depth and length, and covered with stone slabs. On the latter were found also bones, &c., showing that in later times corpses were brought there without separating the graves.

It was cleared out and a hole made in the roofing, the sides and bottom cemented, and so converted into a cistern, which has since remained in use.

VI. *The Shekfee Sakhra* (*additions*).—To my paper on this building, sent some time ago to the office,[1] I wish to add the following :—In Mr. Guy le Strange's book, "Palestine under the Moslems," I find, on p. 167, that Nâsir-i-Khusrau writes, A.D. 1047 :—

"In the court of the Haram Area, but not on the platform, is a building resembling a small mosque. It lies towards the north side, and is a walled enclosure (*hadhîrah*) built of square stones, with walls over a man's height. It is called the Mihrab Dâûd (or the Oratory

[1] *Quarterly Statement*, 1897, p. 103.

of David). Near (perhaps better translated—in it) this enclosure is a *rock* standing up about as high as a man, and the summit of it, which is uneven, is rather smaller than would suffice for spreading thereon a (prayer) rug. This place, they say, was the throne of Solomon (Kursi Suleimân), and they relate that Solomon sat thereon while occupied with building the noble Sanctuary."

This refers apparently to the place in question, the Shekfi Sakhra, which had then no Mastabeh, but an enclosure, probably of the size and form of the present Mastabeh, and had two names—Kursî Suleimân (the rock) and Mihrab Dâûd (the building).

As Nâsir speaks of an "enclosure," calling it also a "building" resembling a small mosque, the present Kubbet Shekfi Sakhra was at that time already standing. To a mosque belongs not only an enclosure but also a building; and we can hardly imagine that the *rock* was unprotected under the open air. So I think the state of things *was as it is now*, only the flooring was lower, and with an enclosure round about. The flooring became higher when the Mastabeh was made, hence one has to step down from it to the rock, inside the building.

On p. 169 it is said :—"This passage is copied by Mujîr ad Dîn, who, however, adds that, according to the received tradition of the day, the place is known as the Kursî Sulaimân, is within the dome known as the Dome of Sulaimân, near the Bâb ed Duwaidariyyah." As the latter is identical with the present Bâb el Atem, this proves my suggestion to be right. On the plan facing p. 172 it is marked as Kursî Isa, or the Throne of Jesus. So one sees that names were always changed after some time, and it is no wonder that it is now called "Shekfi Sakhra." Further, on p. 169 we read :—"Nâsir mentions two other domes as standing in the northern part of the Haram Area. The first of these, the Dome of Jacob (Kubbet Ya'kûb)," he says, "stood near the colonnade running along the wall from the present Bâb Hittah—then called the gate to the cloisters of the Sufis—to the north-west angle of the Haram Area. . . . . The other dome stood apparently in the north-east angle of the Haram Area. . . . . It was called the Oratory of Zachariah." Mr. Guy le Strange thinks that of the latter nothing is left, but I think the Mastabeh (or prayer place named on the Ordnance Survey Map south of the barracks) is the remains, and the kubbeh has gone. So we see there were three kubbets in one straight line, and at nearly equal distances apart one from the other, as we have it even to-day : (1) Just south of Bâb el Atem and the fountain, Kubbet *Jacob*; (2) Kubbet David Sulaimân or Kursî Sulaimân, or 'Îsâ, the present Shekfi Sakhra; and (3) Kubbet Zakariyyâ, the present prayer place.

VII. *The Book: "Palestine Under the Moslems."*—On reading this work I found that several things (especially those of Jerusalem) could in various places be more satisfactorily explained. For instance, p. 122, it is said that the total number of the present pillars supporting the dome of the rock is 28, whereas "Ibn al Fakîh says there were 30 in his

day. The difference, however, is not very material." In reality there is *no* difference when the two pillars bearing the stair house leading up to the roofs are counted with the other larger ones. They are in all plans omitted ; I cannot say why, but think as they are standing so near the wall, only leaving 2 feet 8 inches space between, and generally the place there is dark, so they were not properly observed or taken notice of, although they are not so small, but with the capitals 12 feet high and having 13½ inches diameter. So very likely Ibn al Fakîh counted them with the others.

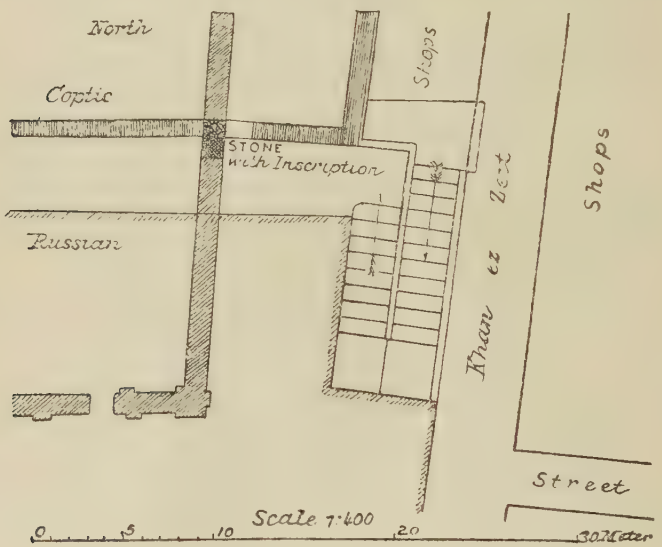
VIII. *The Madeba Mosaic.*—The mosaic in the floor of the ancient church at Madeba will throw some light on orthography and topography. As Jerusalem is divided in two by a long street with colonnades, it doubtless represents the Ælia Capitolina, and hence the mosaic must be of the fourth century. A Greek priest professor in the Convent of the Cross went over and made careful copies on several sheets, which afterwards were reproduced on one sheet and on a much smaller scale by a Roman Catholic priest, which drawing was then photographed and issued by the Franciscan Convent, and sent to many persons. I also received a copy, together with a small pamphlet, written in Greek, explaining the picture. The architect of the new German Church in the Muristân recently went over with his assistant and made new copies of the actual size, so his may, perhaps, come out improved, but I think much time will elapse before these can be published.

AN ARABIC INSCRIPTION FROM JERUSALEM.

By Dr. Max van Berchem.

(Translated, by permission, from the "Mittheilungen und Nachrichten" of the German Palestine Society.)

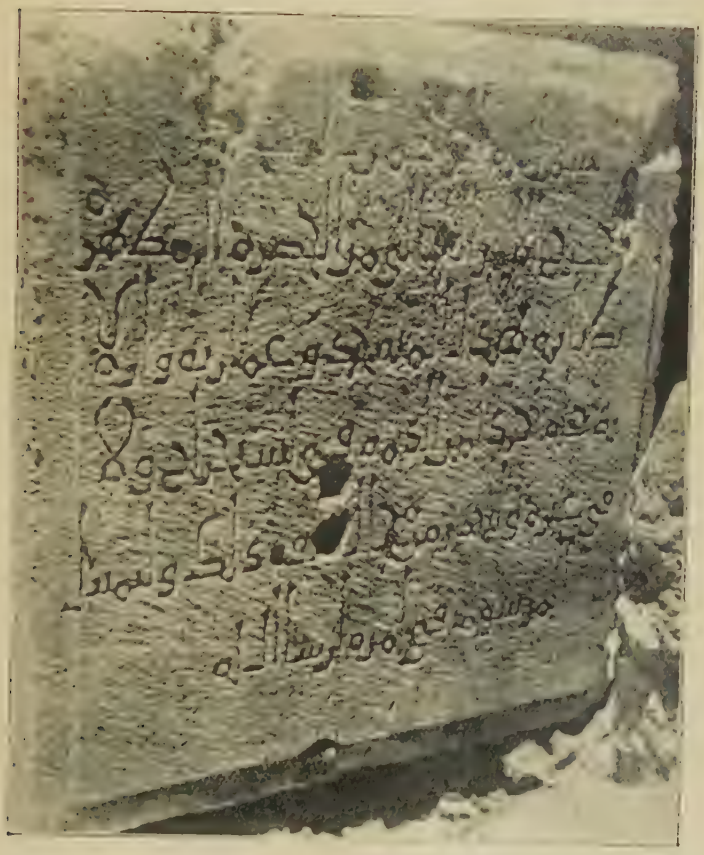
On July 31st, 1897, a large stone with an ancient Arabic inscription was found in Jerusalem, west of the street *Khân ez-Zeit*, in a lane which divides the Coptic and Russian possessions east of the Church of the Sepulchre. The stone, which is of *Maleki*, is 1 metre long by 1 metre in height, and 1·08 metre in breadth ; the surface, on which is the inscription, is rough hewn and enclosed by a border 5 centimetres broad and



Plan of a Drawing by P. Palmer.

1 deep. In this surface there are four square holes, which undoubtedly were designed to receive the fastenings of a marble or metal facing ; this, of course, has long disappeared. At the word عبد الله of the fifth line, it may clearly be observed that the doubtless ancient inscription was chiselled later than the holes. This circumstance leads to the conclusion that the stone itself had belonged to an ancient building. [*See* plan. On August 2nd Architect Palmer saw near this stone another quite similar, of the same height and breadth, but still surrounded with rubbish.—Ed. "Mittheil."]

Immediately after its discovery the stone was taken under the guardianship of the Turkish Government. Afterwards the surface with the inscription was sawn off and brought to Constantinople. Notwithstanding these unfavourable circumstances the *facsimiles* are already numerous. There lie before me at present a squeeze and two photographs by Architect Palmer, of Jerusalem; a better squeeze by Dr.



(*From a photograph.*

Sandreczky there; a photograph given to me by P. Lagrange; and, lastly, another by P. Golubowich, of Jerusalem. A third squeeze is in the hands of Professor Clermont-Ganneau in Paris, a fourth at St. Petersburg. This wealth of copies is almost superfluous as the text is palæographically clear. The inscription consists of six lines in elegant, simple, unadorned Kufic, with unpointed letters. It reads:—

(1) بسم الله الرحمن الرحيم

(2) خرج الأمر العالى من الحضرة المطهّرة

(3) بصيانة هذا المسجد وعمارته وأن لا

(4) تُدخِله أحدًا من الذمّة فى استجراح ولا

(5) فى غيره وليحذر من مخالفة ذلك وليمتثل

(6) المرسوم فى أمره إن شاء الله *

"In the name of God, &c. From the exalted Majesty the high command is issued, that this mosque is to be well guarded and maintained in good condition. No one under our protection (*i.e.*, Christians and Jews) shall be allowed to enter either under the pretext of rebutting evidence upon oath (?) or for any other object. Great care is to be taken not to contravene this and to conform to the regulations issued in accordance with this command. May it be God's will."

First, a few words by way of comment on this undated but important text :—

Line 2 : *ḥaḍrah*, properly "presence," signifies in the administrative and diplomatic language of the middle ages, "Majesty, Highness, Excellency." Thereby also is indicated the place where the person resides or rules, as the Court or Government buildings, possibly what is now understood in Turkey by the Sublime Porte. Owing to the following epithet the personal sense is here to be preferred, although the word *Kharaja* = "has been issued," rather speaks for the local sense. The general meaning remains exactly the same.

Who is now thereby intended? To this question an answer is given by an important Arabic work of the fifteenth century, the so-called *Diwân el-inshâ'*.[1] This title of honour, he says, was much used in the diplomatic correspondence (*mukâtabât*) of the Khalifs, and indeed, with one of the two epithets *el-'âliyah* or *es-sâmiyah*, "the high" (majesty). Here, indeed, another epithet occurs, *el-muṭahharah*, which will be further explained below ; whilst the adjective *el-'âlî* is found with the substantive *el-amr*, "the command." According to the Diwân, it was afterwards among the Ayubites the custom to write with *ḥaḍrah* to the great personages of the empire, especially to the viziers ; and to this day (as in the fifteenth century) this formula is used in the official correspondence of the Government of the Mameluke kingdom with foreign, mostly non-Moslem, kings, patriarchs, &c. At present this old

[1] Paris, Bibliothèque Nationale, No. 4439 (anc. fonds 1573), fo. 160vo.

title of honour is come down to be a mere form of politeness; *ḥaḍratak* is in the East as much as our "sir." As is usually the case, the title has gone down all the steps of the social hierarchy. In order to determine who is here meant, the date of the inscription must be inquired into.

The Franciscans in Jerusalem, who have lately had printed a transcription and translation of this text, ascribe it to the Sultan Saladin[1]—on what ground does not appear. To everyone acquainted with inscriptions it will be evident that the text is certainly older. I have shown elsewhere that in the historical monumental inscriptions of Syria the Kufic was already supplanted by the round character under Nûr ed-dîn, in the middle of the twelfth century, and, consequently, that all the inscriptions of Saladin known to us (except decorations from the Koran) are written in the round character.[2] Our text, therefore, belongs to the time before Nûr ed-dîn, and, consequently, before the Ayubites; from which it follows, according to the above quotation from the Diwân, that by the title *el-ḥaḍrah* a Khalif is here meant.

But which Khalif? The epithet *el-muṭahharah*, "the exalted," which is joined to this title, points at first to an Alidite source. To make good this assertion would carry us too far.[3] The first Alidite rulers, who possessed Palestine for a long time, were the Fatimites, who conquered the land under the Khalif Mu'izz, about 972.

On the other hand, palæographic grounds are in favour of an older origin. The text belongs to that older and plain sort of Kufic which flourished in inscriptions from the first century of the Hejira to the appearance of the Fatimites. I have shown that the so-called Karmatic variety of the Kufic, with its peculiar ornaments, was brought by the Fatimites from Tunis to Egypt, and probably also to Syria;[4] but our text is free from such ornaments, and points us to the ninth or the beginning of the tenth century. But let us put that aside. In any case it is certain that our inscription forms by far the oldest example of a Government order in the Arabic epigraphy.

Lines 3-4: The order requires the guarding and general preservation[5] of a specified mosque, and forbids persons from the so-called protected people (*i.e.*, Christians, Jews, or Magi, who, according to Mohammed's and Omar's decisions, enjoyed, by payment of a capitation tax, the *jizyah*, the protection, the *dhimmah* of the Mohammedan community)

[1] See *Quarterly Statement*, 1897, p. 302.

[2] *See* "Corpus Inscriptionum Arabicarum" (= C.I.A.), i, 85 *seq.*; Inscriptions arabes de Syrie (abstract from the "Mémoires de l'Institut Egyptien," III), 34–42.

[3] With reference to the Alidite signification of the word *ṭâhir*, "clean, pure," *see* (*inter alia*) "C.I.A.," i, 25, obs. 1; Epigraphie des Assassins de Syrie (abstract from the "Journal Asiatique"), 43. For the use of the second verbal form *cf.* several places in the Koran.

[4] Notes d'archéologie arabe (extract from "Journal Asiatique"), i, 115 *seq.*

[5] Not as it is usually, and in too narrow a sense, translated "the building." For the meaning of *'imârah*, *see* "C.I.A.," i, 99; Epigraphie des Assassins, 35.

under any pretence to be allowed to enter. For the unpointed استراح the reading *istikhrâj* first suggests itself. But as that word seems to afford no suitable sense, I would read *istijrâḥ* = to deny a (false) evidence upon oath; to stand upon one's oath against such. As is known, this procedure before a court of justice was adopted when the evidence was inadequate; an opposing witness swore by some holy place that the first witness had given false evidence. Of course in this sense the second form *tajrîḥ* is used: the tenth would, therefore, mean to seek to accomplish the occurrence of the *tajrîḥ* or to petition someone for it, which would suit very well here, only I must confess that this explanation is very doubtful. Should it give the right sense the word would be very interesting, inasmuch as it would show that the mosque in question was regarded as especially holy not only by Moslems, but also by the Christians (or Jews) who, under pretext of a legal procedure, would sneak in, perhaps because they had some particular reason for doing so.

There is the further question: What mosque is here intended? At present the whole place is in the hands of the Christians. The stone was found in an old wall, which without doubt belongs to the remains of the Basilica of Constantine. This wall lies in the vicinity of the *propylæum* described by Eusebius, which probably formed the entrance into the building from the east. If this is really so, there is a very important passage having a bearing upon it in the "Annals of Eutychius" (called Sa'îd ibn el-Baṭrîk), Patriarch of Alexandria, who died about 940, and whose annals reach down to his own time.[1]

Eutychius narrates the well-known history of the taking of Jerusalem by Omar, and mentions the treaty of protection for the Christians granted by him to the Patriarch Sophronius. He proceeds (I abridge):—

Omar entered the city and sat down with Sophronius in the innermost part[2] (in penetrali) of the Church of the Sepulchre. The time of prayer approached, and Omar wished to pray. "Pray here," said Sophronius. "Not here," answered Omar. Sophronius now led him into the Basilica (ad templum) and spread a carpet in the middle of it that Omar might pray.[3] As he again refused, the Patriarch led him

[1] To the following quotation, as well as to the historical questions arising out of it, my attention was recently directed in Paris by M. Clermont-Ganneau. That acute scholar allows me to make use of it here, although he has not yet published his own essay (on this subject), for which I owe him most cordial thanks. As Selden's edition of "Eutychius" with the Arabic text is not by me, I must quote from the Latin version in Migne's "Patrologia Græca," cxi, 1099. In Selden's edition ii, 284–290. The parallel passages abridged by el-Makîn, i, 28.

[2] The Arabic text of el-Makîn has here *ṣaḥn* = court, by which is meant the large open court, which belonged to the Church of the Sepulchre.

[3] Templum indicates here the Basilica itself, which lay to the east of the Anastasis. *See* Schick's plan in the Journal of the German Pal. Soc., viii, Plate XI.

outside to the steps by the entrance of the Church of Constantine looking towards the east (egressus ad gradus qui sunt ad portam ecclesiæ sancti Constantini qua Oriente respicit). Here Omar prayed alone. Afterwards he asked :—"Do you know why I would not pray inside?" "How could I know that?" said Sophronius. Omar replied :—"If I had prayed inside the Church it would have been lost to you. After my death the Moslems would have taken it from you ; for they would soon have said :—'Here Omar prayed!'" Omar then gave to the Patriarch a written document (syngrapha) by which he decreed that the Moslems might pray only singly on the steps ; further that they should neither assemble there for prayer, nor the voice of the Muezzin over there summon them to it. Then Omar asked of Sophronius another place for the erection of a mosque, respecting which Eutychius narrates the well-known story of the Temple place (*i.e.*, of the Haram). This was to become a mosque on the condition that no other mosque should be erected in the city. This Omar agreed to, and again gave to Sophronius a written promise.

Omar then proceeded to Bethlehem, where the same thing was repeated. At the hour of prayer the Khalif prayed at the southern arch of the Basilica (ad arcum australem), which was covered with variegated mosaic work. Again Omar gave to the Patriarch a document, that here only single Moslems, one after the other, might pray, that they might not assemble there, nor be called together by the Muezzin, *and that nothing in these regulations might be altered.*[1] "Yet in this our time," adds Eutychius, "the Mohammedans have acted contrary to the writing of Omar. For they have torn away the mosaic from the arch, *and written thereon what seemed good to them ;* and they have come together for prayer, called by the voice of the Muezzin. *Also they have done the same at the steps which were before the door of the Church of Constantine.* There they have taken for themselves half of the vestibule of the Church and erected a place of prayer therein which they have called the Mosque of Omar."

This long quotation supplies certain important data, which I can only consider shortly :—

1. The Christian historian obviously has an object. He desires to show by his history—whether rightly or not must remain uncertain—that the Christians in the entire precincts of the Holy Sepulchre, *i.e.*, the Anastasis, the Court, the Basilica, and the Propylæum, possessed indefeasible rights derived from Omar himself. From this it follows clearly, that already before the time of Eutychius the Moslems had disputed these rights. This brings to mind a similar occurrence, namely, the celebrated procedure with regard to the Great Mosque of Damascus under the Khalif Walîd. When he wished to destroy the old Church of St. John, the Christians produced letters from Omar, so that the Khalif could only with the greatest difficulty accomplish his object. Naturally,

[1] This expression frequently occurs in inscribed laws.

here as there, the quarrel ended in favour of the Moslems. They convert one part of the entrance into a mosque, which they call Omar's, because Omar had prayed there, and inscribe therein arbitrary precepts which were unfavourable to the Christians.

2. In Omar's conduct one distinguishes two definite moments: in the inner court, as well as in the Basilica, he refuses on any account to pray. On the outer steps he does indeed pray, but testifies that this procedure shall not give occcasion for the subsequent erection of a mosque. Moslems may pray there one by one, but they should not assemble there, that is, should not form a congregation (*jamâ'ah*) there, and therefore not erect a *jâmi'* or mosque. It follows clearly hence that at the time of Eutychius the Moslems made no claims to the rotunda of the Holy Sepulchre itself, or to the Basilica, but only *to the eastern entrance* where Omar had prayed. This new mosque, with its inscribed precepts, was therefore exactly at this entrance, that is, in the position where our inscription has been discovered, which forbids the entrance of non-Moslems into a certain mosque under any pretext.

3. It seems further to follow from this, that the chief entrance to the Church of the Sepulchre at that time was upon the east side, not on the west side of the Basilica, as many explorers contend. Consequently, the apse of the Basilica would be directed towards the west, that is, towards the rotunda of the Sepulchre itself. This would be of great importance in connection with the question of the orientation of churches in the time of Constantine.

4. When we consider that by this infringement of their rights the Christians were much distressed, and naturally strove against it, and further that the inscription palæographically falls in the time given by Eutychius (beginning of the tenth century), the question arises whether this inscription is not that intended by Eutychius. Certain historical reasons seem to support this. We have seen that the command issued from a Khalif, either an Abbaside or a Fatimite. The expression *el-muṭahharah* seems to support the latter supposition, whilst the palæographical examination points decidedly to a period before the Fatimites. Moreover, we know that the Fatimite rule, at least until the time of the inhuman Ḥâkim, who altogether destroyed the Church of the Holy Sepulchre, was comparatively mild in reference to the Christians, and that under the two first Fatimites severe regulations against them could hardly have been issued. But on palæographic grounds the inscription cannot absolutely be put back to the time of Ḥâkim. If we now look further back, who reigned here before the Fatimites? The Abassides, yet not always directly. About 878 Palestine was conquered by the Turk Aḥmad ibn Ṭûlûn, who had made himself independent ruler of Egypt; his successors reigned until about 905. About 936 the dynasty of the Ikhshidites arose in Syria, which continued until shortly before the Fatimite dominion, that is to about 970.[1]

[1] I give only approximate dates as I am writing in the country without the necessary books.

Although both dynasties acknowledged the suzerainty of the Abasside Khalifs, the contents of the inscription point rather to a time when the latter exercised direct rule in Jerusalem. This was the case in the years 905 to 936, that is, exactly at the period which Eutychius, who died in 940, could distinguish as "this our time." And just at that time an occurrence took place which may readily explain an increase of Islamic influence in Jerusalem: about 929, during the Karmatian war in Arabia, the pilgrimage to Mecca was suspended; in consequence of which the Moslems for about 20 years made the pilgrimage to Jerusalem, and indeed to the Mosque of Omar. Did the erection of an Omar-Mosque at the Holy Sepulchre stand in any connection with this occurrence? If so, the inscription might have been composed about the year 930 under the Khalif Muḳtadir, who here would be distinguished by the title *el-ḥaḍrah*. The epithet, *el-muṭahharah*, which, as already mentioned, points rather to an Alidite origin, may be explained by the Abassides, who had their seat in Bagdad, being surrounded by numerous Persian influences.

5. Eutychius says that the newly-erected mosque at the Holy Sepulchre was called the Mosque of Omar. Does it follow from this that at that period the Ḥaram was not so called; or did every spot where Omar was said to have prayed become distinguised as a Mosque of Omar? That is a question which requires careful discussion.

6. The claims made by the Moslems to the Church of the Sepulchre were certainly entirely set aside by the Crusades and the grand buildings of the Europeans at the Holy Sepulchre, and since then the spot has remained Christian. Why did not Saladin endeavour to claim back the rights to which this inscription pointed, and to take from the Christians at least a portion of the Sepulchre Church, as indeed all churches, except this one, were then turned into mosques? Here, again, I must content myself with merely putting forth the question.

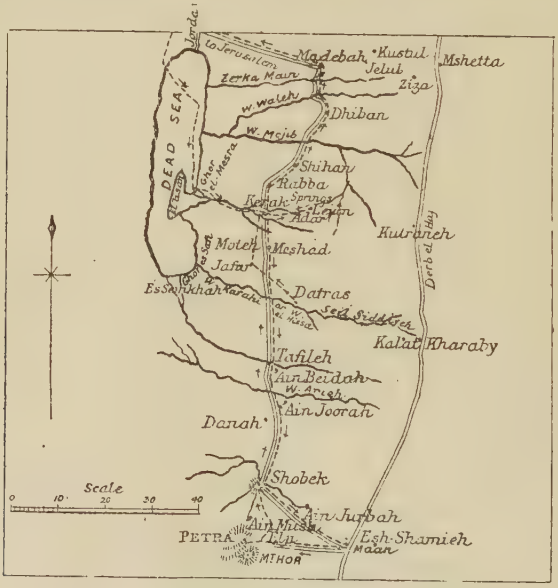
In conclusion, until something further is discovered, it seems possible that the newly-found inscription is that mentioned by Eutychius; at least it stands in close connection with his narrative. This circumstance imparts to it great importance for the history of the Church of the Sepulchre.

Since these lines were hastily written in the German review, several papers have been issued on the Arabic inscription of Jerusalem, and M. Clermont-Ganneau, in his communication to the Academie des Inscriptions of Paris, has given an exhaustive account of the matter. On my side I have gathered some new information which would modify, in some points of detail, the results of my first researches. But as the general views exposed here have not been changed, I prefer to wait for a new redaction of this memoir till some important fact would lead me to different conclusions.

A VISIT TO KERAK AND PETRA.

By Charles Alexander Hornstein, Esq.

In September, 1895, I was invited by Mr. Forder (C.M.S., Kerak) to spend a few days at Kerak. He had come over to Jerusalem to fetch his wife and child. I had often wished to visit this very interesting city, and was glad of the opportunity now afforded me. We thought we would shorten the journey by engaging the Government boat which from time to time goes across the Dead Sea to the Ghor el Mizrah. We were successful in securing it, so Mr. Forder sent a man on to Kerak to bring animals down to the Ghor to wait for us. The following day we drove



Map of Route to Kerak and Petra.

down to the Dead Sea, which we reached at 6 o'clock p.m. Here we found the two boatmen waiting for us, and shortly after, a breeze springing up from the north-west, we set sail and were soon shooting across the sea. At first we took a south-easterly course, and in about three hours' time got close to the opposite shore, then turning to the south we ran along the coast for the next four hours. Shortly after midnight the moon rose, and by its feeble light we could see the "Lisan" rising like a wall out of the sea on our right.

(*To face p.* 94.)

KERAK, SHOWING NORTH WALL OF CASTLE.

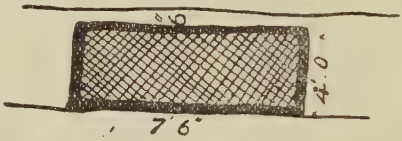
(*To face p.* 95.

MOUNT HOR.

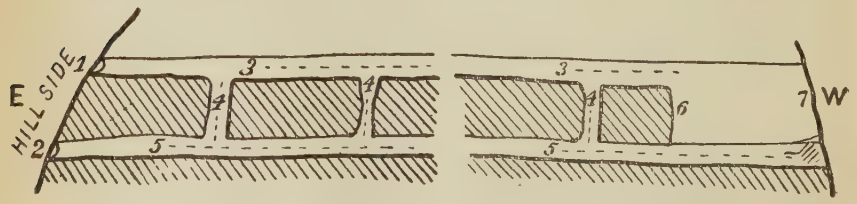
About 1 o'clock a.m. we got near the landing place. The breeze all the time had been growing stronger, and the waves rose rapidly. Suddenly we felt a shock and stopped short. We had run against a sand bank. One of the boatmen jumped out and tried to shove the boat off, but to no avail. We next tried to lighten her by throwing a number of iron girders and planks that we had on board into the sea; still she held fast. The waves meanwhile kept breaking over us, drenching us. All our efforts having proved fruitless we decided that the best thing to be done was to make ourselves as comfortable as we could under the circumstances and wait for daybreak. We should have attempted to get ashore, for we were not more than 300 yards off, but we could not tell how deep the water might be. At 6 o'clock one of the boatmen said he would go ashore and bring help, as he knew of an encampment two hours off. He got to shore safely, and, finding the men who had come down from Kerak with our animals, sent them to our assistance. With their help we managed to wade through safely. We then mounted our animals and riding for a quarter of an hour reached a tent which our men had pitched. We soon had a kettle boiling and enjoyed a delicious cup of tea. The hot sun dried our clothes in a few minutes and we forgot all the discomforts of the past night.

The Ghor el Mizrah is a lovely spot, covered with trees, through which flow streams of fresh, clear water. Pigeons and partridges abound. The Wady Kerak flows through this Ghor and empties itself into the sea. As soon as it began to get cool we mounted our animals and started for Kerak. The ride is a continual ascent for seven hours. We stopped twice on the road to rest, and shortly after 3 a.m. reached the city. In the evening Mr. Forder and I went to pay our respects to the Governor, Helmy Bey Effendi. He received us very courteously and showed us a number of views that the son of the Waly of Damascus had taken; amongst them were three of Petra. I asked him if it was necessary to get a special permit from Constantinople to visit the ruins of Petra, as I had heard that he had refused to let some travellers go who had applied to him. He said that up to the present he had not allowed any travellers to visit the place, but if I wished to go he would give me permission and provide me with an escort. This was quite unexpected, and an offer not to be refused, so I thankfully accepted. I had brought only one dozen plates with my camera, so Mr. Forder suggested sending a messenger to Jerusalem for some more. We found a man willing to undertake the journey for three medjiedies, promising to be back in five days' time. The next day Mr. Forder took me round to all the places of interest, such as the Castle, the Roman bath, the Western or Bybar's Tower, which have all been so fully described by De Saulcy, Canon Tristram, and Dr. Bliss that it will not be necessary for me to say anything about them. On a knoll outside the city, opposite Bybar's Tower and a little to the north-west, is a tomb about 9 feet long. The natives believe this to be Noah's Tomb (*Siddna Nuh*). It is covered with broken pieces of glass, bits of pottery, hennah, and sticks with pieces of

various coloured rags tied to them. These have been presented to the Weli as votive offerings. One place of interest, which I do not think has ever before been noticed, is the tunnel which runs underneath the castle at its south-east corner. Mr. Forder's attention was drawn to this tunnel by some Bedouin in September, 1893. None of them had ever entered it, as they were too much afraid of evil spirits, so one day Mr. Forder and Miss Arnold went down to explore it. The opening was merely a hole large enough for them to squeeze through. At the time I went there the entrance had by the Mutassarif's orders been cleared out. This tunnel is cut out of the solid rock and runs in a westerly direction. Its average width is 4½ feet. About 10 yards from the entrance is an opening in the floor 7½ feet long by 4 feet wide, nearly the width of the passage, leaving a narrow ledge, 6 inches wide, on the left hand side. By placing the right hand against the opposite wall we managed with great care to step along the ledge.



There are eight of these holes or openings, the distance between each being from 12 to 30 yards. Soon after passing the last opening we came to a drop of about 8 feet, which landed us on to a lower passage or aqueduct. This one runs in a westerly direction for about 50 yards and stops at a solid wall of rock from which trickles a small stream. Towards the east this lower passage runs parallel to the top one, till passing under the fourth opening from the west end it takes a turn to the north and winds round to the fifth opening; from here it continues to run parallel to the top passage.



1. Opening to top passage.
2. ,, lower passage.
3. Top passage.
4. Shaft to lower passage.
5. Lower passage.
6. Drop to passage.
7. Rock.

The width of this lower passage, where it commences to run underneath the other, is not more than 18 inches; at the bend it is about 1 foot; underneath the first hole from the entrance, a little over 3 feet; its depth beneath this hole is nearly 20 feet. It is difficult to say what the

(*To face p.* 96.)

KERAK. WESTERN TOWER.

object of this tunnel could have been, as it stops at the rock, and there are no side passages.

The next day we went out to Lejûne. The road, after crossing the Wad ez Zaiyatain, lies across the plain, which at this time of year was perfectly barren, except for the *kilo* or alkali plant. We passed some Bedouin encampments, and the ruins of Adar. In four hours' time we reached Lejûne, which is situated in a little plain. On the north is a stream which flows eastwards for a few miles, then turning towards the north flows into the Arnon. This stream forms the Wady Lejûne. The town itself appears to have been a military station for cavalry. It is rectangular, and has a strong wall round it, with gates on the four sides. The north and south gates are triple, the east and west single. It was divided into four squares by two streets which crossed each other at right angles. The north-east, north-west, and south-west squares were enclosed by chambers, traces of which can still be seen. The courtyards in all probability must have been used for tying the horses in, and the chambers were for the use of the soldiers. In the south-east square is a mass of ruins. I hunted all over for inscriptions but did not find any. On a little hill to the west is a raised platform, about 40 yards square, with a few steps leading up to it. A number of large stones lay about, and several pieces of columns. The walls of this platform had been used by the Bedouin as a burying ground. Most of the graves were marked by a stick with a bit of rag tied to it. This must have been a watch-tower of some kind, as it commands a good view of the surrounding country. As it was getting late now, we returned home. On the evening of the fifth day our messenger, true to his promise, returned with the plates; we went up to the Mutassarif and told him we would like to start for Petra the next morning. He kindly gave us two letters of introduction, one to the Kaimakam of Tafileh, and the other to the Kaimakam of Ma'an, and said that two soldiers would be ready to accompany us next morning.

We, Mr. Forder and I, started at 7 a.m., and passing the Seraiyah, or Government house, were joined by two Circassian cavalry men. Our road lay past 'Ain Sit. At 9.15 we reached El Mesh'had, or the Place of Witness. It is an old ruin on the roadside, and contains several Arabic inscriptions. The tradition among the Bedouin about this place is that the prophet Mohammed sent his cousin Ja'far with a large army against the Christians who lived in Moteh, a village to the right of the road, and a short distance from El Mesh'had. The prophet's army was defeated, and Ja'far fatally wounded. As the Christians surrounded him, he suddenly rose and flew across the plain to the top of a little hill, about three miles off to the south-west, where he died. His tomb is still to be seen. In consequence of this wonderful deed he is called "Ja'far el Taiyar"—Ja'far the Flyer. Ali Abu Talib, who was an eye witness, swears to the truth of it. Hence the name of the place from which he flew is called "El Mesh'had."

At 11.20 we reached the Wad el Ahsa, or Hissa, which in its upper

course is called "Wad el Siddiyeh" and "Seil Gharaby," and in its lower course, "Wad el Kurahi." It forms the southern boundary of the district of Kerak. It took us nearly an hour to descend the narrow, rough, winding path to the bottom of the valley. A stream flows through it bordered by thick oleander bushes. We rested here a short while for lunch and then commenced the ascent. The path this side was not as rough as the other, though it was much longer. Riding along this path, I noticed a great number of fossil shells. We reached the top at 3.50. A little before sunset we came in sight of Tafileh. We were now in the district of Jebâl (Gebal, mentioned in Psalm lxxxiii, 7). Tafileh, the ancient Tophel (Deut. i, 1), is a large village comprising 700 houses. It is beautifully situated on the side of a hill with a well-watered and well-cultivated valley below it, with olive groves, vineyards, and fig gardens. No less than eight springs are to be found in and around the village. We went direct to the Kaimakam's house and gave him the letter of introduction we had from the Mutassarif. He entertained us very hospitably, and gave us a room in the Seraglio as we had no tent with us. The next morning at 8 o'clock we started. We had three soldiers added to our number. At 9.40 we reached 'Ain el Beidah, a stream of clear, cold water which runs right across the road. Here we stopped for a few minutes to water our horses, and watched the shepherds giving their flocks a drink. One hour brought us to Wad el Ârieh, through which flows a narrow muddy little stream. At 11.40 we reached 'Ain Joorah, a little pool of water hidden amongst the rocks close to the road-side. Here we rested awhile to lunch.. Soon after leaving 'Ain Joorah we passed Dânah, a little village situated in the valley to the right of the road. About one and a half hours later we came in sight of Shobek, and although it seemed hardly two hours off it took us nearly four hours to get there, as the road winds round considerably.

Esh Shobek is the principal place of the district called Esherâh. It is a walled city built on a high hill and has only one gate. The road leading up to it is rough and winding. There are from 50 to 70 houses in the city—mostly in ruins. Baldwin II erected a castle here and called it Mont Regalis or Mont Royal, the remains of which, as well as those of the church, can still be seen. Many of the ruins are of Arabian origin. In time of war the inhabitants were supplied with water from a spring, which is right in the heart of the hill and to which one descends by 372 steps, partly cut out of the rock. The valley of Shobek is well watered and cultivated, the principal fruit being figs. When the Government took this part of the country in 1893 they placed here a small garrison of mounted soldiers. In May, 1895, some trouble arose between the soldiers and the inhabitants. The former tried to compel the women to draw water for their horses; the men refused to allow them and a quarrel ensued, which resulted in the soldiers being turned out of the city. The inhabitants immediately brought provisions into the city and shut the gate. A message was sent to them from the Mutassarif telling them to surrender. They answered that they were perfectly willing

(To face p. 99.)

The Village of Ma'an esh Shamieh.

to pay all the taxes imposed on them, but would not allow any soldiers to enter the city. About 600 foot soldiers, with two cannon, and 100 cavalry were then sent to try and compel them to surrender. They pitched on the hills opposite Shobek. For some weeks little was done beyond an occasional skirmish. The Bedouin of the surrounding country hearing about the disturbance came to the assistance of the Shobekies. One day the soldiers, watching their opportunity, attacked the Bedouin, and with the help of the cannon drove them off, killing a great many. They eventually took the city, and placed a sufficient body of soldiers to guard it. The Circassian lieutenant, Omar Effendi, who was in charge, and with whom we stayed, received us very kindly and showed us all over the place. The next morning at 8 o'clock we left Shobek. Four hours' ride across a barren plain brought us to 'Ain Jurbah. Here we found a number of Bedouin horses that, owing to the exceptionally bad crops that year, had been turned out to graze on the scanty herbage growing around the 'Ain. Three of the animals had died. We stayed here some time to lunch and rest our horses, then continuing our journey reached Ma'an at 5 o'clock. We called on the Kaimakam and gave him the letter from the Mutassarif. He was extremely kind and invited us to stay with him. There are two Ma'ans situated on the Derb el Haj or Pilgrim Road, about a quarter of an hour distant from each other. The one to the north is called Ma'an esh Shamieh, or El Izghier; the other, Ma'an el Kebir. Both are built chiefly of mud bricks. The inhabitants are very polite and seem altogether of a class superior even to the Fellahîn around Jerusalem. There are a great many gardens and orchards, with streams of water flowing through them. A little to the east of Esh Shamieh are the remains of an aqueduct. We followed it for some distance, and came to the ruins of some water-mills and a very large pool. Passing these, we came to the ruins of what must at one time have been a large village.

Ma'an is one of the halting-places of the pilgrims, who go from Damascus to Mecca. We stayed here till the next afternoon. At 1 o'clock we started, accompanied by five soldiers and the sheikh of Ma'an. Our road lay across the plain in a north-westerly direction. About sunset we came in sight of Mount Seir, and shortly afterwards began descending towards the village of Elji, which we reached at 7.30 p.m.

Mount Seir, the Edom of Moses' days, is the range of mountains where Esau lived (Gen. xxxvi, 8, 9). In Deut. ii, 5, the children of Israel are told not to molest the Edomites, for God had given this mount to Esau. The length of this range is estimated at 100 miles, and its breadth 15 miles. During the Babylonish captivity, the Edomites took possession of the southern part of Judea, but were afterwards conquered by the Maccabees, and compelled to receive circumcision. Elji is situated on the slope of a hill. It is a stone village of about 50 houses, surrounded by vineyards, &c. On our arrival we were taken to a Mudâfeh, or Guest Tent, as the inhabitants at this time of the year

live out of doors. We had some coffee, and in an hour's time supper, which consisted of meat cooked with bread and tomatoes, was served; we made a hearty meal, and then tucked ourselves up in our blankets, and turned in for the night. We rose early the next morning to visit the ruins of Petra. Taking two of the sheikhs and a soldier we rode down to the Wady Mûsa. The valley gets its name from 'Ain Mûsa, which flows through it; it rises above the village of Elji. The tradition amongst the Mohammedans is that this was the scene of the striking of the rock by Moses. It is said that when he struck the rock 12 streams burst forth.

When we reached the valley we were joined by two villagers. About 20 minutes from the village we came to the commencement of the ruins. The most noticeable are a temple with Corinthian columns and several tombs. Passing along the valley, which is covered with oleander bushes, through which we had in several places to force our way, we came to the Sik.

The Sik is a narrow passage or chasm between high rocks, which rise on either side from 80 to 200 feet; it is about 10 feet wide in the narrowest part, and about 40 feet in the widest. The bottom of the passage is covered with oleander bushes through which the waters of 'Ain Mûsa flow, whilst from the rocks and crevices above hang creepers, wild fig, and tamarisk. The length of this passage is nearly one mile.

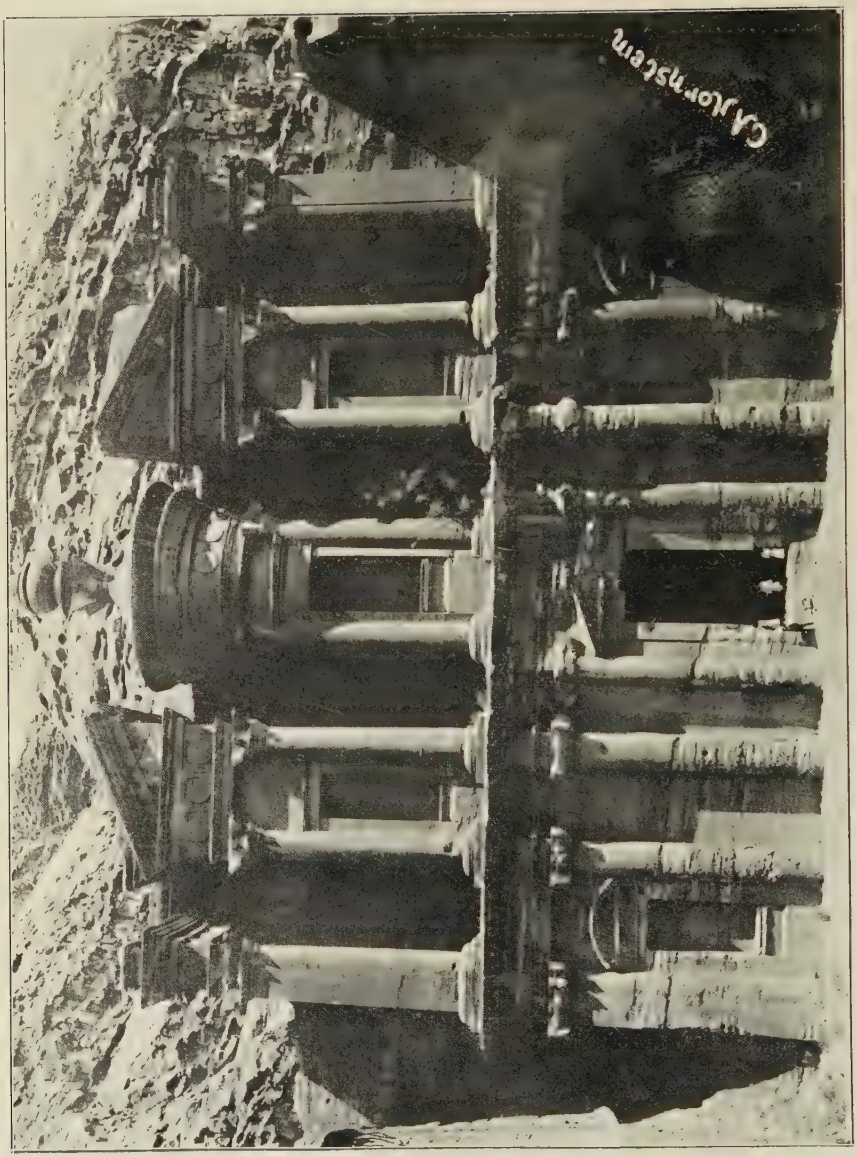
Riding along the Sik we saw some cuttings and niches in the rocks which at one time may have contained inscriptions or statues. Half an hour after entering the Sik we came suddenly upon the temple called Khasneh Phar'aun (Pharaoh's treasure-house). It is cut out of the solid rock. The façade is of a lovely roseate tint. The Khasneh consists of two storeys. Five of the six columns which were in front of the porch are still standing. Entering the porch we found three doors. Those on the right and left lead to two chambers. The middle one leads to a large chamber, about 40 feet square, on three sides of which are again doors leading to three smaller chambers. These are unadorned except by the natural colour of the rock, which displays a variety of the most delicate tints. The top storey is solid; it consists of what may be called three towers. The centre one is round and terminates in a dome surmounted by a stone urn, which the natives believe contains Pharaoh's treasures: hence the name Pharaoh's Treasure-house.

On the three towers and between them are beautiful sculptures, representing winged female figures. The whole space in front of the Khasneh is covered with oleander bushes. Turning to the right and following the valley we passed a number of tombs of various shapes and sizes. One has a peculiar arrangement of graves cut out in the floor; on the wall of this tomb are two inscriptions. Right opposite these tombs is the amphitheatre which is hewn out of the rock. Thirty-three rows of seats rise one above another. Following the valley, which now turns to the north-west, and passing several ruins of what must have been temples, we came to the remains of a triumphal arch; close to this

(*To face p.* 100.)

KASR EL BINT.

(*To face p.* 101.)



THE DEIR OR MONASTERY, PETRA.

is a large building which the Bedouin call Kasr Phar'aun (Pharaoh's Palace). The walls on three sides are nearly entire. Near this again are the remains of a church and the ruins of a castle. Leaving our horses with the soldiers and sheikhs, and taking the two villagers, who accompanied us, to carry the camera, we ascended a ravine to the north-west. The rocks here are of variegated colours; purple, black, red, shading off into each other. At several places we came to steps cut in the rock. After half an hour's climbing and scrambling we reached the top; here we found a large open space or platform, surrounded by high rocks. Facing the south-west and cut out of the solid white limestone rock is a large temple, called the Deir or monastery. It is much larger than any of the other temples, though not nearly so magnificent as the Khasneh with regard to colouring and design. It is 151 feet long by 142 feet high. The façade is ornamented with columns and niches, but no figures whatever. There may at one time have been images or statues in the niches, but these have entirely disappeared. On the top of the dome over the middle niche is an urn like the one surmounting the Khasneh. The interior consists of one large room, 36 feet 9 inches by 39 feet 8 inches. At the north end is a recess for an altar, with two steps, on either side, leading up to it; it is 14 feet wide by 8 feet deep, and raised 4 feet above the level of the floor. We noticed two holes on each side of the recess in the angles of the walls, above the steps, such as are made to tie animals to. It is possible that these were used to secure the animals brought for sacrifice. The doorway is 30 feet high and 17 feet wide.

Opposite the Deir, at the south-west end of the platform, is a rock with a level top, from which we got a magnificent view of Mount Hor in the distance.

Retracing our steps to the Kasr, which we reached about midday, we found that the two sheikhs had gone on to some Bedouin, called the Bedoul, who were living in the caves to the south of the ruins, to prepare some dinner for us. We followed them, and soon reached the dwelling (?) of a miserable-looking family, with hardly any clothing on. They had already killed a kid, and were boiling it. After dinner we rested a while, and then told the sheikhs that we would like to go to Jebel Haroon, Mount Hor. They refused to listen to such a thing, for they said if they took us up some evil would assuredly befall them before the year was out. We laughed at this and told them we would go by ourselves. Seeing we were determined, they tried to dissuade us by saying it was too late, and we should not get back till late at night. However, we told them we would try, so, starting up a very rough and rocky path, we reached the top of the wady. From here we had a magnificent view of the mountain, which still seemed a long way off. The Arabs had said the truth when they told us we should not get back till night. The sun was already near the horizon, and would have set by the time we reached the top, so that it would have been impossible to take any photos, as I had hoped to.

Knowing that our time was limited, and that we could not return the next day to ascend the mountain, we decided that the only thing to be done was to get as near as possible and take a photo. Crossing the plain, we rode to the top of a little hill, from which we got a very good view.

Mount Hor is composed of sandstone of different shades. It has two peaks. On the north-east peak is situated the tomb of Aaron. We could see the white dome and little square building enclosing the tomb. It was a great disappointment not to be able to ascend. Retracing our steps we passed the Kasr, the Khasneh, and through the Sik. It was quite dark by the time we reached Elji. The next morning we rode down to the Sik, to take a view I had not been able to get the day before.

We returned to the village and lunched, then rode up to 'Ain Mûsa. It is a stream flowing out between two rocks, which latter have been ornamented with bits of rag and sticks by the pilgrims who come to visit this sacred place.

Leaving 'Ain Mûsa, we took the road north-east to Shobek (*see* map), which we reached at sunset. The next day brought us to Tafileh. Leaving here soon after midnight we got to Wad el Ahsa about 8 o'clock. Here we rested at the waterside and had some breakfast, then crossing the valley a little higher up than on the former occasion, we came to a watermill. A rough path led us to the plain above. Turning to the north-west we reached the ruins of *Datras*. The first ruin is that of a small temple facing the south. On each side of the door is a niche. The stones are large and well dressed. The Arabs call this Kasr el Bint, the Palace of the Girl. It is said that the daughter of a sheikh who lived here had such wonderful eyesight that she saw the enemy coming when they were still two days' journey off. A little to the north-west of this Kasr are the ruins of the city of Datras. The gate, which is triple, like those at Lejûne, and part of the city wall, are still standing. On the lintels are some carvings. Passing through the gateway, we came to a mass of ruins with columns lying about. We had not much time left to examine these ruins thoroughly, as it was getting late, and we wished to reach Kerak that evening. We noticed a great many rock-cut cisterns around the city. Leaving Datras we rode across the plain to Ja'far. The tomb is an ordinary Weli. The Mutassarif had specially asked me to take a photo of the dome. It has withstood the ravages of time, although it was apparently built without mortar, the stones having been so shaped as to form a dome.

From here we rode through the village of Moteh, and reached Kerak soon after sunset. We called on the Mutassarif, and gave him a brief account of our trip, which we had enjoyed so much.

Taking leave of the kind Kerak friends, I returned to Jerusalem by the usual route across the *Mojeb*, or Arnon, to Madeba and Jericho. I should like to mention two things:—The first is about Lejûne. On the Palestine Exploration Fund map it is marked as being at least 30 miles from Kerak, but it is not more than 12 miles. The second is Datras. There are two places marked on the map—one Datras,

The Village of Elji.

(To face p. 102.)

a little over three miles; and the other Zatras, about 15 miles to the south-east of Kerak. The latter, *Zatras*, corresponds to the one we visited. The soldiers and Bedouin who were with us called it Datras. About the former I could get no information; it appears to be unknown.

JEWISH MEASURES OF CAPACITY.

By Colonel C. M. Watson, C.M.G., R.E.

In a paper which was published in the *Quarterly Statement* for July, 1897, on the probable "Length of the Jewish Cubit," I gave some reasons for concluding that it was approximately 17·7 inches, subject to a slight correction on either side of this figure.

I did not, however, allude to the connection between the length of the cubit and the contents of the Jewish measures, and as this is a question of considerable interest I now propose to make some remarks with regard to it.

The Jews had two scales of measures of capacity: one for things dry, such as grain, &c., and one for things liquid.

The various measures on the two scales are usually given as follows, and there seems no reason to doubt the correctness of the proportions:—

Dry Measure.	*Liquid Measure.*
Homer.	Kor.
Epha = $\frac{1}{10}$ homer.	Bath = $\frac{1}{10}$ kor.
Seah = $\frac{1}{3}$ epha.	Seah = $\frac{1}{3}$ bath.
Omer = $\frac{1}{10}$ epha.	Hin = $\frac{1}{2}$ seah.
Cab = $\frac{1}{6}$ seah.	Log = $\frac{1}{12}$ hin.

Of these measures, the homer was equal in capacity to the kor, and the epha to the bath, while the seah was common to both scales. If, therefore, the bath or the seah was known there would be no difficulty in fixing the capacity of the other measures. But, unfortunately, there is considerable difference of opinion as to the capacity of the bath, and as a natural result the contents of all the measures vary, as given by different writers on the subject.

Neither in the Bible nor in the works of Josephus is there any accurate information, probably because both Josephus and the writers of the Sacred Books were well acquainted with the measures and did not realise the trouble that they would cause students many centuries later. Josephus, for example, states that a hin was equal to two Athenian choas, but this was probably only approximate, and as the Athenian choa is not very accurately known, it is not much help. What is required is an expression of the cubic content of a measure in terms of

linear measure, and then if the unit of linear measure was known the capacity could be calculated.

Fortunately there is an instance in the Old Testament where this was done, namely, as regards the brazen sea and the 10 lavers which Hiram made for King Solomon when the Temple of Jerusalem was built. Of these we have three accounts: in the First Book of Kings, the Second Book of Chronicles, and in the Eighth Book of Josephus's "Antiquities of the Jews." Indeed, there may be said to be five accounts, as the descriptions in the Septuagint do not quite agree with those in the Hebrew Version from which the English translations have been made, and the variations are of considerable help in throwing light upon the subject.

I am not aware that these descriptions have been much used in endeavouring to ascertain the exact values of the Jewish measures, but this may be due to the fact that there are apparent difficulties, due probably to mistakes in transcription, which make the matter seem more puzzling than it really is. That such mistakes should occur is only natural, as in all cases of copying from manuscript to manuscript.

I propose, therefore, first to quote the description of the vessels, as given by the different authors, then, by comparing the discrepancies, to try to ascertain the actual facts, and then from those facts to endeavour to calculate what was the actual capacity of the vessels. And I will begin with the accounts of the brazen sea, quoting from the Revised Version of the Bible, which is presumably the most accurate.

The Description of the Brazen Sea.

Revised Version.

1 Kings vii, 23. And he made the molten sea of 10 cubits, from brim to brim, round in compass, and the height thereof was 5 cubits, and a line of 30 cubits compassed it round about.

26. And it was a handbreadth thick, and the brim thereof was wrought like the brim of a cup, like the flower of a lily; it held 2,000 baths.

Septuagint.

1 Kings vii, 23. And he made the sea 10 cubits from the lip of it to the lip of it, made in a circle, and 5 cubits the height of it.

(N.B.—The content is not given.)

Revised Version.

2 Chron. iv, 2. And he made the molten sea of 10 cubits from brim to brim, round in compass, and the height of it was 5 cubits, and a line of 30 cubits compassed it about.

5. And it was a handbreadth thick, and the brim thereof was wrought like the brim of a cup, like the flower of a lily; it received and held 3,000 baths.

Septuagint.

2 Chron. iv, 2. And he made the molten sea of 10 cubits the diameter, disposed circlewise, and 5 cubits the height, and the circumference 30 cubits.

5. And the thickness of it a handbreadth, and the lip of it as the lip of a cup, formed like the flower of a lily, containing 3,000 measures (*μετρητὰς τρισχελίους*), and he completed it.

Josephus.

"Ant." VIII, iii, 5. And he made a brazen sea, constructed as a hemisphere (*εἰς ἡμισφαίριον εσχηματισμένην*), and the brazen vessel was called a sea on account of its largeness, for the laver was in diameter 10 cubits, and the thickness made of a handbreadth. . . . . And the sea contained 3,000 baths (*βάτους τρισχιλίους*).

The descriptions agree except as to the content of the vessel, which is given as containing 2,000 measures and also as containing 3,000 measures. At first sight the two contents, differing so greatly from one another, appear to offer a considerable difficulty, but there is an easy explication. From the accounts in the Bible it would not be possible to say whether the vessel was a hemisphere of 10 cubits diameter or a cylinder of 10 cubits diameter and 5 cubits height. In the latter case it would, of course, contain exactly half as much again as in the former case, *i.e.*, if the hemisphere contained 2,000 measures the cylinder of the same diameter and height would contain 3,000 measures. Josephus makes it clear that it was a hemisphere, but the scribe who wrote 3,000 probably calculated it as a cylinder.

I think, therefore, that we may safely assume that the vessel was a hemisphere, 10 cubits in diameter, and that it contained 2,000 measures. The cubical content was, therefore, equal to 261·799 solid cubits, and the capacity of $\frac{1}{2000}$ part of this was ·1309 solid cubit.

Before discussing what this measure represented it is necessary to consider the question of the capacity of the smaller lavers, of which there were 10, five on each side of the Temple. These were supported upon quadrangular bases with wheels underneath. The varying descriptions of the bases are of very considerable interest, but as they have no direct bearing upon the subject of the measures of capacity I need not refer to them further.

The Description of the Ten Lavers.

Revised Version.

1 Kings vii, 38. And he made 10 lavers of brass: one laver contained 40 baths, and every laver was 4 cubits, and upon every one of the 10 bases one laver.

Septuagint.

1 Kings vii, 38. And he made 10 brazen vessels; one vessel containing 40 measures (*τεσσαράκοντα χοεῖς*) measuring 4 cubits; one vessel upon one base of the 10 bases.

Revised Version.

2 Chron. iv, 6. He made also 10 lavers, and put five on the right hand and five on the left hand, to wash in them.

Septuagint.

2 Chron. iv, 6. And he made 10 lavers, and placed the five on the right and the five on the left, to wash in them the parts of the sacrifices.

(N.B.—There is no mention in Chronicles of the capacity of the 10 lavers.)

Josephus.

"Ant." VIII, iii, 6. And he constructed 10 round brass vessels, of which each contained 40 measures (*χυτρογάυλους δέκα λουτῆρας στρογγύλους χαλκοῦς ὧν ἕκαστος ἐχώρει τεσσαράκοντα χόας*). And the height was 4 cubits, and the rims had the same distance apart. And he placed these lavers on the 10 bases, which were called *Μεχενώθ*.

From these descriptions it is not quite easy to say what the forms of the lavers were. From the Bible accounts they might have been cylindrical, hemispherical, or quadrilateral, and, looking to Josephus, they might have been either of the former. The height, as given by him, is clearly excessive, and may possibly refer either to the height of the laver from the ground or from the bottom of the base. All that is certain is that each laver was 4 cubits across and contained 40 measures, translated in the English version as baths.

It is quite clear that the measure used for the lavers is not the same as that for the brazen sea, or that, assuming them to be the same, the number 2,000 is too large or 40 is too small. But it is worthy of note that, though in the English Bible the word "bath" is used for both, in the Septuagint and in Josephus different words are used for the measure of capacity of the sea and of the lavers, as will appear by reference to the quotation given above.

A cursory examination shows that the unit of measure of the lavers is about three times as great as that of the measure of the brazen sea, and this naturally leads us to remember that the first sub-multiple of the Hebrew measure translated "bath" was the "seah," which was one-third of the former. If, therefore, the measure of the sea, which we have already shown to be equal to ·1309 solid cubit, was the "seah," the capacity of the "bath," as derived from the same vessel, would be ·3927 solid cubit; 40 of such baths would be equal in capacity to ·3927 × 40, or 15·708 solid cubits.

Let us see now how this would compare with the probable contents of one of the smaller lavers.

A quadrilateral vessel, of which the length of each side was 4 cubits and the depth 1 cubit, would contain 16 solid cubits, and the fortieth part of this is ·4000 solid cubit.

A hemispherical vessel of 4 cubits diameter would contain 16·755 solid cubits, of which the fortieth part is ·4188 solid cubit.

A cylindrical vessel of 4 cubits diameter and $1\frac{1}{4}$ cubits in depth would contain 15·7183 solid cubits, of which the fortieth part is ·3929 solid cubit. The value for the bath as derived from this is almost exactly the same as that derived from the brazen sea, and leads one to think that the small lavers were cylindrical in form. As this, however, cannot be regarded as quite certain, and as the shape and size of the brazen sea leave no cause for doubt, it seems preferable to depend on the latter for the measure of capacity and to take the bath as being equal to ·3927 solid cubit.

The contents of the subdivisions of the bath would then be as follows :—

1 seah = $\frac{1}{3}$ bath = ·1309 solid cubit.
1 hin = $\frac{1}{2}$ seah = ·0654 ,,
1 log = $\frac{1}{12}$ hin = ·0054 ,,

These are the results as obtained from the description of the vessels in the Temple, but I do not think it would be desirable to adopt them as conclusive unless it can be shown that they are easily derivable from the linear cubit. That this is the case, however, the following considerations indicate :—

A cylindrical vessel, 1 cubit in diameter and half a cubit in depth, is equal in capacity to ·3927 solid cubit.

A cylindrical vessel, half a cubit in diameter and 4 palms in depth, is equal in capacity to ·1309 solid cubit.

A similar vessel, half a cubit in diameter and 2 palms in depth, is equal in capacity to ·0654 solid cubit.

A similar vessel, 1 palm in diameter and a quarter of a cubit in depth, is equal in capacity to ·0054 solid cubit.

It is evident, therefore, that the different measures, as based on the capacity of the brazen sea, are connected in a simple and probable manner with the length of the cubit.

In the considerations given above I have only dealt with the measures relatively to one another and to the length of the Jewish cubit, independently of what the latter was, as expressed in modern measure. The actual capacity of each I will now proceed to investigate.

In order to find what are the equivalents of the Jewish measure of capacity in English measures, it is necessary to know the value of the length of the cubit as compared with the latter. I have already given in the paper referred to above some reasons for considering that most probably the length was about 17·7 British inches.

Assuming this to be the case, the contents of a solid cubit was 5,545·233 cubic inches, and the capacity of each of the Jewish measures was as follows :—

1 bath or epha	=	2,177·613	cubic inches.
1 seah	=	725·871	„ „
1 hin	=	362·935	„ „
1 log	=	30·245	„ „

These results do not agree with some previous determinations, but I am not satisfied as to the value of the data upon which the latter are based. For example, in the table of measures given in Bagster's Bible the log is given as being equal to ·833 pint, which would make the bath equal to 59·976 pints or 2,073·17 cubic inches. This determination, however, appears to be based upon the statement by Josephus in the "Antiquities," Book iii, Chapter 8, that the hin was equal to two Athenian choas, and as the exact size of the latter is not very well fixed this cannot be regarded as quite satisfactory.

Colonel Conder, in his interesting "Handbook to the Bible," gives another determination of the Jewish measures of capacity, and arrives at the conclusion that the bath, or epha, was equal to 1,728 cubic British inches. This he derives from the fact that the capacity of the log is stated by the Rabbis to have been equal to the content of six hens' eggs, which he has found to average ·4 cubic inch each, thus making the log 24 cubic inches. But it appears to me rather doubtful whether this is altogether satisfactory, especially as, in the same article, he remarks that Maimonides, in his comments on the tract Peah, states that the contents of the log were equal to 4 digits by 4 digits by $2\frac{7}{10}$ digits, the digit being equal to the width of the thumb. As the ordinary digit, or finger-breadth, was probably equal to ·737 inch, the digit referred to by Maimonides must have been considerably larger, and the log must therefore have been more than 24 cubic inches.

If, however, the log is taken as 30·245 cubic inches, in accordance with the calculations already given, Maimonides's digit would be ·88 inch, or about 7 barleycorns, as opposed to 6 barleycorns, the equivalent of a fingerbreadth. It is probable, therefore, that the calculation made by Maimonides was fairly correct. If the log, as estimated by him, was not exactly equal to 30·245 cubic inches, it is more likely to have been a little greater rather than less.

On the whole, therefore, I see no reason to doubt the determination of 2,177·6 cubic inches as the approximate capacity of the bath.

It is somewhat remarkable, although it may be only a coincidence, that this value of the bath corresponds very nearly with the value of the British bushel.

The present standard bushel is equal to 2,218·19 cubic inches ; but this is slightly larger than the older British measures, which derived their origin from very ancient sources. The Winchester bushel, which existed

in the time of King Henry VII, measures 2,150·4 cubic inches, and this, without doubt, is a representative of much older measures.

The standard bushel, which dates only from 1824, was purposely made a little larger than the Winchester bushel, in order that the gallon, which is one-eighth of the bushel, should contain exactly 10 pounds weight of distilled water. It is the older measure, therefore, which must be taken into consideration when making comparisons with other ancient measures.

There is another curious point with reference to the comparison of the British measures with measures based upon the cubit, which is worthy of note. I am well aware of the danger of giving too much value to what may only be coincidences, but at the same time do not like passing over this point. The British standard measures are, as is well known, cylindrical in form, the height being equal to half the diameter of the cylinder. Now, if we take a cylinder of which the diameter is 2 cubits (of 17·7 inches), and the height 1 cubit, the content is

equal to	17,421·03	cubic inches.
Compare this with the standard quarter of 8 bushels	17,745·53	,,
And with the quarter of 8 Winchester bushels	17,201·60	,,
Again, a cylinder 1 cubit in diameter and $\frac{1}{2}$ cubit in height equals	2,177·63	,,
The standard bushel equals	2,218·19	,,
The Winchester bushel equals	2,150·20	,,
A cylinder $\frac{1}{2}$ cubit in diameter and $\frac{1}{4}$ cubit in height equals	272·20	,,
Standard gallon equals	277·27	,,
Winchester gallon equals	272·25	,,
Lastly, a cylinder $\frac{1}{4}$ cubit in diameter and $\frac{1}{8}$ cubit in height equals	34·02	,,
Standard pint equals	34·66	,,
Winchester pint equals	34·03	,,

Thus showing that the British measures are given by measures of standard forms based on the cubit, and following one another in the simplest possible way. On the other hand, they are *not* based on measures commensurate with the British foot or inch. For example, the standard bushel (according to the interesting work by Mr. H. J. Charny, entitled "Our Weights and Measures") is contained in a cylindrical measure of which the diameter is 17·80927948 inches and the height is 8·90463974 inches, which are rather inconvenient numbers for ordinary use.

I think, therefore, there is considerable probability that the British bushel is the modern representative of the Jewish bath, and this gives an indirect confirmation to the statement that the cubit was approximately 17·7 inches. For example, if we calculate the length of the cubit from

the Winchester gallon, we have the equation (x being the length of the cubit):—

$$\frac{1}{2} \times \frac{1}{2} \times \frac{1}{4} x^3 = \frac{272{\cdot}25}{{\cdot}7854}$$

$\therefore x = 17{\cdot}692$ inches.

This differs by a small fraction only from the length of the cubit as otherwise determined.

In conclusion, I will give a *résumé* of the scale of Jewish liquid measures as calculated:—

1 log	....	....	....	....	....	·873 standard pint.
12 logs = 1 hin	....	....	....	....		1·309 standard gallons.
24 logs = 2 hins = 1 seah		....	....		2·618	„ „
72 logs = 6 hins = 3 seahs = 1 bath			....		7·854	„ „

THE PROSPECT FROM PISGAH.

By Rev. W. F. Birch, M.A.

The panorama seen by Moses is thus described in Deut. xxxiv, 1-3:—And Moses went up from the steppes of Moab unto Mount Nebo, to the top (or head) of Pisgah, that is fronting Jericho. And Jehovah showed him all the land, (even) Gile'ad, as far as Dan, and all Naphtali, and the land of Ephraim and Manasseh, and all the land of Judah as far as the hinder sea, and the South, and the Round, (even) the plain of Jericho, the city of palm-trees, as far as Zo'ar ("Crit. Comm. Deut.," Prof. Driver).

The Hebrew word (עֵד), so useful in locating the sepulchres of David (*Quarterly Statement*, 1883, p. 107; 1890, p. 206), and thrice translated in Deut. *unto*, Dr. Driver says "means distinctly *as far as*." It is needless, then, to prove it. Failure has apparently dogged all attempts to find a point on the east side of the Jordan or Dead Sea, from which all the tracts or spots named above may be seen in their respective positions. Accordingly, Professor Driver ("Deuteronomy," p. 419), observes:—"The panorama is superb, though the terms in Deut. xxxiv, 1-3, are hyperbolical, and must be taken as including points filled in by the imagination as well as those actually visible to the eye."

Let me lead a forlorn-hope to what I believe will prove to be the long-lost head of Pisgah.

To me it seems all but certain that the Biblical description is literally true; that imagination has no place in it, otherwise snowy Hermon or Lebanon, which Moses entreated to see (Deut. iii, 25), would surely have followed the mention of Gilead; and that the perplexity is due to taking

Josephus as a guide to Zoar and Dan, and letting later writers be personal conductors to the hinder sea.

I hope a friend for a day will leave Jerusalem in the cold, hurry down to the mouth of the Kidron, take the steamer 8½ miles across the Dead Sea, and climb the 5½ miles of the slopes of Moab to Talât el Benat. If this be done on the first day of the last month (the anniversary of the death of Moses, according to Josephus), he will probably, weather permitting, be able with a telescope to distinguish all the tracts and spots named above as being seen by Moses from the mountain of Nebo. It is essential to know beforehand the positions of the objects to be looked for. In the above list seekers have been baffled by the three limits given—Dan, the hinder sea, and Zoar. Josephus places Zoar at the southern end of the Dead Sea ("Wars," iv, 8, 4), Dan at the springs of the lesser Jordan (let him mean) at Tell el Kady, while recent writers identify the hinder sea with the Mediterranean. Here, I suspect, are three real mistakes, producing naturally disappointment. Let me try to fix these limits correctly.

Zoar.

Happily investigation has already discovered the true approximate position, if not the very site, of Zoar, the little city near Sodom. From Gen. xiii, 10-12, we learn that Lot, from the mountain east of Bethel, "beheld all the plain (*Ciccar*) of Jordan (in which plain the five doomed cities were situate), that it was well watered everywhere . . . . as thou comest unto Zoar." It is now admitted that the Dead Sea existed before the time of Abraham. Were the cities, then, in the plain at the northern or at the southern end of it? This is the question. Let it be admitted that either plain might be called *Ciccar*. Then it follows (1) If Sodom (and Zoar with it) be placed in the plain at the southern end, that this plain was the plain of Jordan. But the muddy Jordan is still 40 miles distant from it. How could a plain possibly be called the plain *of the Jordan* when it was so far from the Jordan? Such *lucus a non lucendo* nomenclature is impossible. In a small country like Palestine names cannot be hurled recklessly 40 miles. It must follow, therefore, that Sodom and Zoar were in the northern plain, the only district left. (2) Lot *saw* all the plain of Jordan. On the east side of the river the plain is distinctly in sight from the hill near Bethel, being 25 miles distant, while it is physically impossible for anyone to see the plain at the south, quite 50 miles distant, as intervening mountains intercept the view ("Bible and Modern Discoveries," p. 21). One witness after another testifies to this, while no one (so far as I can learn) comes forward to say he has ever seen the southern plain from that hill. Either of these points seems to me enough to kill the error, though nevertheless it still moves, galvanized by Josephus, Onomasticon, Crusaders, and Arabic writers, all of no value on this point. It is cruel even to put such witnesses into the box. It might also be urged that Gen. xiii, 14, 15, preclude Lot's Hill, near Bethel, from commanding a view of the country at the south-east end

of the Dead Sea, which part undoubtedly formed a portion of Moab's territory not to be possessed by Israel. After Lot's departure, Abram was bidden to survey the panorama (apparently from the same hill) and told, "All the land which thou seest, to thee will I give it, and to thy seed for ever." *All* that Abram then saw was to be his: but the south-east part was Moab's, and so could not be his. Therefore he did not see it, which was quite natural, as it was out of sight.

It is almost superfluous to add—

(*a.*) That a plain 25 miles distant might easily be seen to be well watered, but not so readily one 50 miles away.

(*b.*) That if Sodom had been at the south end of the sea the four Kings (Gen. xiv), after reaching Hazezon Tamar, must have *turned back* to reach Sodom, a foolish mode of proceeding. It is obvious, however, that, advancing along the west side of the Dead Sea, they would at last at the north end come opposite to Sodom, with the Jordan between it and them. Probably the five Kings prevented their crossing the river, until its depth and rapidity decreased north of the Aujah. Then quickly followed defeat in the Vale of Siddim, flight to the mountain, and the leap into a slime pit (bitumen shaft), by which act the King of Sodom saved his life. *See* Amama, *in loco.*

(*c.*) Zoar is associated with places in the northern part of Moab in Jerem. xlviii, 34; Isa. xv.

(*d.*) Abraham, from a spot near Hebron (Gen. xix, 28), looked towards Sodom and Gomorrha and toward all the land of the plain. The Hebrew expression (עַל־פְּנֵי) requires, I believe, what follows to be within sight (*Quarterly Statement*, 1896, p. 262), and Mr. G. Armstrong informs me that from Beni Naim (the traditional spot) the eastern plain at the north of the Dead Sea is within sight.

Sir George Grove's arguments for placing the plain of the Jordan with Sodom, Zoar, &c., at the north end of the Dead Sea, seem to me insuperable.

In *Quarterly Statement*, 1879, p. 15, I placed Zoar at Tell esh Shaghur, near which is a spring. This suitable position was supported by the resemblance of the Arabic word Shaghur to the Hebrew Zoar (*little*). Mr. Merrill's identification of Zoar with Tell Ektanu, supported in turn by its resemblance to *Katan*, another Hebrew word for *little*, seems to me too far-fetched to have any weight. Such a change is most improbable. Is Littleton likely to be ever called Weeton, or Washington Lavington?

Let us now be thankful that the position of Zoar is fixed approximately, if not precisely. Be it observed it has been proved without regard to Josephus.

The Hinder Sea.

From no mountain on the east side of the Dead Sea is it possible to see the Mediterranean near Judah. Higher mountains intervene. It is, therefore, self-evident that Moses could not from Pisgah see *as far as* the hinder sea, *if* we assume that this sea must here mean the Mediterranean.

Be it noted, however, that Deuteronomy does not say the *great* sea, but the *behind* sea. Behind what or whom? This is the question. The expression is also used in Joel ii, 20, and Zech. xiv, 8, but it is in contrast to another sea entitled the *before* or *Eastern* sea, while the mention of Zion and Jerusalem fixes the spectator between these two seas. In Deut. xi, 24, the identical phrase occurs, used by Moses, *unto the hinder sea*. Here the speaker is in the plain of Shittim, north-east of the Dead Sea (and facing east in oriental manner), he naturally defines Israel's western limit by the hinder sea, *i.e.*, the sea behind him. But I ask, is this one passage by itself sufficient to establish as an axiom the point that whenever in the Bible *the hinder* is joined to *the sea*, the Great Sea (*i.e.*, Mediterranean) must be referred to. I have pointed out (*Quarterly Statement* 1889, p. 38) that the rigid use of nouns (*emek*, *gai*, *nachal*) is the key to Jerusalem topography, but I hesitate to deal thus with adjectives. At any rate, as one swallow does not make a summer, why is one case (Deut. xi, 24) to make a rule, and hand over Deut. xxxiv, 2, to imagination? It is said that this book is of a composite character. Do all writers then necessarily use the same word with precisely the same meaning, or has the reviser planed down all their differences of usage? Let the calm mind of the wise decide.

Pisgah was on the east side of the Dead Sea. Moses, therefore, when he began his survey looking *eastward* (iii, 27), would have that sea *behind* him, then as he turned to the left about, tracing the scene and horizon, he sees at last the land of Judah ending near Masada, and so reaching *as far as* the apparent end of that sea, described as the hinder sea (as I believe) in Deut. xxxiv, because it was *behind* Moses when he began his survey. So Abraham was able to see the ram behind him, *i.e.*, which had been *behind him* before he turned round. Let judgment stand over till Dan is examined and prejudice abates. Patrick observes, "some take the hinder sea to be the Dead Sea." If Dan proves to be visible from Pisgah, the critics will perhaps incline to acquittal, and not oppose the sacred writer's claim to fidelity in Deut. xxxiv, by building a rule on one text.

Dan.

I admit that Josephus practically places Dan at Tell el Kadi. Does he never err? Do we not suffer to this day through his Jerusalem blunders (*Quarterly Statement*, 1886, p. 28)? Surely he must have known more of the Holy City than of Dan. Let him then stand down. I will listen to his tales, but I cannot always be guided by him.

Dr. Post (1888, p. 196) invites us to Jebel Osh'a for Pisgah, promising there the most comprehensive view of the Promised Land. Moses, however, died in the Land of *Moab*, and I do not see how to extend Moab so as to include Jebel Osh'a. Siâghah (first proposed by Professor Paine and supported by Colonel Conder), situated 10 miles due east of the mouth of the Jordan, in a part where several have been inclined to place Mount Nebo, at present enjoys the honour of being popularly identified

with the head of Pisgah. The fatal objection must nevertheless be admitted that Tell el Kadi (the popular Dan) is invisible from Siâghah (2,291 feet). There is no doubt here. Part, if not the summit (3,597 feet) of Jebel Osh'a, higher than Siâghah, intervening, excludes Tell el Kadi from our sight. With grief I realised that the objection was true. But was Dan really at Tell el Kadi? If so, in Judges why is not mention made of its spring, "the largest spring in Syria, and said to be the largest single spring in the world"? Has not Josephus misled us again? I go to the Bible for the truth, and so discover that Tell el Kadi was certainly not Dan—but most probably Baal-gad.

Tell el Kadi (505 feet) is, according to my measurement, 102 miles from Siâghah (2,291 feet). If, therefore, the line of vision lay along the depressed trough of the Jordan valley and nothing higher than the Sea of Galilee (−682 feet) intervened, then (according to calculations made for me by the Rev. Hector McNeile) 392 feet of Tell el Kadi would be visible from Siâghah. Unfortunately the line passes east of that sea.

Dan and Baal-gad.

The northern limit of the country taken by Joshua was "Baal-gad in the valley (Bikah) of Lebanon under Mount Hermon" (Josh. xi 17); the northern limit at a later date was Dan (as is seen in the frequent phrase "From Dan to Beersheba"). Dan (Judges xviii, 28) was "in the valley (Emek) that lieth by Bethrehob." It is said of the spies (Numb. xiii, 21), they "searched the land from the wilderness of Zin (in the south) unto Rehob (in the north) as men come to Hamath." Beth-rehob and Rehob (here and 2 Sam. x, 6, 8) are apparently identical. Now *Bikah* denotes a larger valley than *Emek*: *e.g.*, the *bikah* of Megiddo is the great plain through which the Kishon flows; while the *emek* of Jezreel is the valley running eastwards from Jezreel. One expects therefore to find Baal-gad in a larger valley than that in which Dan was situated. In eastern Palestine the land possessed reached *as far as* Mount Hermon (Josh. xii, 1); in western, *as far as* Baal-gad (xi, 17). One would expect the two limits to fairly correspond to one another. Further, there are only two large valleys (Bikah) in one of which Baal-gad must have been situated, either in the great valley between the Lebanon and Hermon ranges, or in the Huleh depression, about 16 miles long by 6 miles broad ("Survey of Western Palestine," T. Saunders, p. 144), *i.e.*, the head of the Jordan valley. I was (*Quarterly Statement*, 1881, p. 235) in favour of identifying Baal-gad with Baal-bec, because of the position of the latter in the great plain, el Buka'a; but I overlooked a fatal objection, viz., that the land captured by Joshua must, in this case, have extended some 60 miles north of the admittedly approximate position of Dan, the later northern boundary. Even half the distance would involve the difficulty. One is therefore inevitably thrown back upon the Huleh plain as the only possible site of Baal-gad. Dr. Robinson located this place at Banias, the Tivoli of Hermon, on a terrace rising above the plain. I would rather

identify Baal-gad with Tell el Kadi, near which Colonel Conder (1882, p. 226) found some remarkable basaltic dolmens.

As to the name. Baal as a prefix to Biblical names of places is often dropped. It has also been proposed to accept *K* for *G* in identifying Gederoth, Gibbethon ; thus Baal-gad might become *Kad*. The eminence would make it *Tell el Kad*, and *i* being added to give a meaning, the result is *Tell el Kadi*, or *the hill of the judge*. It must be owned, however, that Kadi occurs elsewhere on the map ; but the coincidence of Kadi and Dan each meaning *judge* does not really help much to connect Dan with Tell el Kadi, as the Fellahîn preserve the *sound*, not the *sense* (1882, p. 151, and Bonar's "Land of Promise," p. 457).

With the Huleh plain representing "the *bikah* of Lebanon under Mount Hermon," we are forced to search elsewhere in this district for a smaller plain to represent the *emek* in which Dan stood. On turning to "Memoirs," i, p. 84, I read : "This (division of the country) contains two plains, the Jordan Plain and the Merj Ayun, the latter of which is at a higher level, and is the mouth of the great valley which divides the northern country, the Lebanon, from the Anti-Lebanon. This plain is very fertile . . . ."

We may place Dan in this valley without misgivings, as there is no other rival *emek* hereabouts available, especially since Merj Ayun exactly answers the Biblical requirements, as follows :—

1. It is an *emek* six miles long and from one to three miles broad.

2. It is the mouth of the great valley leading to Hamath.

3. It is a very fertile and also a charming and picturesque plain, as described in Judges xviii, 10 : "A place where there is no want of anything that is in the earth."

4. Laish, *i.e.*, Dan, was connected with Sidon (*id.* 7), and Dr. Thomson observes that the tombs hereabouts are exactly like those of Tyre and Sidon.

5. "Ijon and Dan and Abel-beth-maachah" are mentioned in 1 Kings xv, 20 ; 2 Chron. xvi, 4. If we place Dan about the middle of the plain (say) at Ain el Hosh, 1,768 feet above the sea, and Ijon at the north end of the plain at Tell Dibbin (Dr. Robinson), or at El Khiam (Colonel Conder), and Abel (as already identified), below the southern cascades, at Abil, then the three places are in topographical order from north to south.

6. Possibly in 'Ain el Hosh, written 'Ain el Losh, there may be a survival of *Leshem*, or *Laish*, the earlier name of Dan. Hosh, however, occurs elsewhere.

7. Kulat esh Shukif (2,345 feet), 2½ miles due west of 'Ain el Hosh, would do quite as well as Hunin for the site of Beth-rehob.

The Merj slopes southwards, being 1,700 or 1,800 feet above the sea, and more than 1,200 feet above Tell el Kadi. This great gain in elevation encouraged the hope that 'Ain el Hosh would prove on examination to be visible from Siâghah. With Dan at 'Ain el Hosh (1,768 feet) and distant 107 miles from Siâghah (2,291 feet), and with nothing higher

than the Sea of Galilee (– 682 feet) intervening, Mr. McNeile reports that 1,520 feet of Dan would be visible from Siâghah (? Pisgah). Still, on referring to the reduced map and the raised map of Mr. Armstrong, I was forced to abandon in turn even this hopeful line, since it passes over but a small part of the said sea on its eastern side, while Jebel Osh'a seems to fatally obstruct the view of the Merj from Siâghah. A step, however, has been gained in fixing Dan in the Merj Ayun.

Pisgah.

Siâghah is apparently too easterly to command a view of the Merj. If it be otherwise, further search is needless. This hope, however, seems vain. One must, therefore, forsake Siâghah altogether, and seek among Moab's mountains for some point sufficiently high and westward to admit of a straight line being drawn to the Merj unobstructed by any intervening ground. On the map I find "a conspicuous knoll" ("Eastern Palestine," p. 228), the highest (id 10) point of the ridge hereabouts, called Talât el Benât (2,579 feet), which stands 6½ miles to the south of Siâghah, and 3 miles to the west of it. From this point (by my measurement) it is 113½ miles to 'Ain el Hosh. The line, after 26 miles, passes for some 35 miles over an unsurveyed district, which accordingly on the raised map has had to be filled in from imperfect *data*. Haze, too, has thwarted observers. Therefore, without telescope or theodolite, it is impossible to arrive at certainty. Still, I rely on hope and the accuracy of Biblical topography for final success.

Starting on an aerial journey from Talât el Benât to Dan we pass (as I make it) some three miles west of the summit of Jebel Osh'a. Mr. McNeile reports that "at this point (26 miles distant from Pisgah —Talât el Benât) the line of vision is 891·792 feet above the *great* sea, at 61 miles only 29·462 feet, and at the lowest point (62·165535 miles) about 28·5 feet." This shows that opposite the top of Jebel Osh'a the line is some 2,000 feet higher than the Jordan, and some 2,700 feet below that summit. In other words, if the western side of the said Jebel falls 900 feet on an average for three miles, the line of vision is not here intercepted. Colonel Conder ("Heth and Moab," p. 181) speaks of "the brink or cliff of Jebel Osh'a . . . . Far below are the sandstones of the lower spurs which run out into the Jordan Valley beneath an almost precipitous slope." From a very high ridge (2,260 feet) called Mureijib Beni Atiyeh, four miles south-west of Talât el Benât, there is in less than four miles a fall of 3,552 feet to the Dead Sea (– 1,292 feet), which is precisely 888 to each mile; so that a gradient of 900 feet per mile for three miles would not be unparalleled.

From 26 to 61 miles little is known precisely of the elevation of the valley on the east side of the Jordan. At 61 miles (as stated), or 10½ miles south of the Sea of Galilee, we reach better known land. The line here is at 29·46 feet above the sea, while one mile to the east is an elevation near Mukhraba, marked in Schumacher's map of Northern Ajlun as 859 feet,

so that with a fall of 830 feet for one mile, our line would clear this dangerous point. Henceforth the curvature is in our favour, and soon we are gaily gliding over the blue waters of the Sea of Galilee, 700 or 800 feet above its surface. Then the line begins to climb the hills of Naphtali, and finally we reach *terra firma* at 'Ain el Hosh, 113½ miles from Pisgah, after a trip which for safety, I hope, any aeronaut may envy.

The data, I repeat, do not exist for one to demonstrate that Dan (at 'Ain el Hosh) is actually visible from Talât el Benât; but the probability appears to me so great that I fully expect that on trial both Zoar and Dan will prove to be in sight from Talât el Benât, thus marking it out as Pisgah, if no rival takes the field. A transparent atmosphere and a good telescope will, I hope, settle the question on some auspicious day, to my satisfaction, as elevations have not herein been knowingly pared down to help this theory.

Should Talât el Benât in turn be rejected, it still remains to settle matters with the formidable Mureijib, some two miles more to the west, and 116 miles from 'Ain el Hosh. Hence the line of vision appears at 61 miles to touch, in the Jordan depression, the lowest point at 282 feet below the sea, and passes some 500 feet above the Sea of Galilee. This line seems quite clear of any obstruction from Eastern Palestine.

If, however, Talât el Benât be the head of Pisgah, the matter briefly is thus. Here the venerable law-giver at last reaches his goal overlooking the Dead Sea. His view eastwards is limited to a few miles. He scans the horizon from the east northwards along the *mishor* of Reuben, till it culminates in the highest point of Jebel Osh'a, above the glades of Gad: thence the horizon dips to its lowest point in the far north, in the Merj Ayun, near 'Ain el Hosh. Thence westwards it rises to the still distant highlands of Naphtali, in Upper Galilee; then coming southwards the horizon undulates over the crested summits of the land of Ephraim and Manasseh, nearer still it passes over royal Judah, with which Benjamin is incorporated, until it dips down at Masada, above (or near) the apparent end of the Dead Sea. Here there opens a distant vista of the South in the depression to the left. Lastly, as he turns towards the Jordan, he beholds spread at his feet, yet quite 10 miles distant, the broad plain of Jericho, from the city of palm-trees as far as Zoar, at the foot of the eastern hills. Then casting one longing lingering look over the goodly tents of Jacob, as gardens by the river's side, Moses passes away with Lebanon (Hermon) yet to be seen (Matt. xvii, 1).

The mention of Dan places these details after the conquest. Gilead describes the whole eastern side (visible), as in 2 Sam. ii, 9; 1 Kings iv, 19. Possibly the term "all Naphtali" may cover any part of Zebulon within sight. The frequent combination of Ephraim and Manasseh (in this order) accounts for the variation in regard to their geographical order, which would singly have named Manasseh first. After the disruption, the land of Benjamin lost at times its individuality in the broader name of Judah (Psalm lxxviii, 68; 1 Kings xii, 20). The conclusions are as follows:—

1. The plain of Jordan was north-east of the Dead Sea, Zoar at Tell es Shaghur, Sodom at Tell er Râmeh (1881, 101).

2. Dan was in the Merj Ayun, probably at 'Ain el Hosh.

3. If both the above are visible from any point on the eastern side, commanding a view of the Dead Sea, then the third limit "the hinder sea" means the Dead Sea in Deut. xxxiv.

4. The head of Pisgah was in all probability at Talât el Benât. If thorough investigation proves this to be impossible, then Mureijib apparently must be Pisgah. Haze frequently harasses observers in Eastern Palestine. Hence arise discrepancies between their reports. Professor Paine and Dr. Post report Hermon as visible from Jebel Osh'a, while Colonel Conder says Ajlun conceals it. The latter says "the Dead Sea is hidden by a projecting ridge," while Dr. Post gives it as in sight.

The difficulty as to Dan increases with the square of the distance ; so that it is necessary for Lynceus to report on this perplexing question. Till then the problem is open to the *mathematici*, and *the hinder sea* to the *grammatici*. If the writer of Deut. xxxiv, 1–3, could resist the fascination of Hermon and speak correctly about Dan, one should not hurriedly believe he stumbled over the hinder sea.

Addenda.

1. The advocates of Zoar at the *southern* end of the Dead Sea have such a bad case that they may be excused catching at any straw.

I see it is practically urged in support of the southern site that if Zoar had been in the Shittim plain at the north, Zoar would have been mentioned in the list of Israel's cities. The only lists in which Zoar could thus appear would be in Num. xxxii, 36, "Beth-nimrah and Beth-haran, fenced cities," and Josh. xiii, 27, "In the valley, Beth-haram, and Beth-nimrah, and Succoth, and Zaphon." The first two are distinctly described as "fenced cities," and Beth-haran is identified with Tell Rameh about one mile from Tell esh Shaghur (Zoar). It is not claimed that Zoar was a *fenced* city ; while such would be needless so near to Beth-haran. Therefore its not being named among *fenced* cities proves nothing against the northern site.

2. Again, an appeal is made to Ezek. xvi, 46, "Thine elder sister is Samaria, she and her daughters that dwell at thy left hand : and thy younger sister, that dwelleth at thy right hand, is Sodom and her daughters." I admit that in the Bible, *left* and *right* often stand for north and south. Does it therefore follow that when David's mighty men were on his right and on his left (2 Sam. xvi, 6), that they were south and north of him ; or that when Asahel turned not to the right hand nor to the left, it meant he turned neither south nor north ? Surely the expression may only mean, as in 2 Sam. xiv, 19, neither in one direction nor in another. I cheerfully admit that Samaria was north of Jerusalem, and that a Sodom, at the north end of the Dead Sea, would not be south of the

latitude of Jerusalem, but rather due east; yet to predicate the two points, that in Ezek. xvi *Sodom* must mean literally Lot's Sodom, and left and right must mean literally north and south, seems to me to be, towards settling a difficulty, too short a cut to be satisfactory and safe. If Sodom means merely Moab, then *right* may here well stand for south, but if Sodom is to be taken literally, surely it is easier to let the spectator look north-east or not to be too precise, than to transport the Jordan some 40 miles to the southern end of the Dead Sea, and to make Lot's sight penetrate through mountains. The above objection then does not seem to me to help the southern site. Professor Ganneau (1886, 21), the chief of the southerners, ignores distance, and places Gomorrha, which was in *the Plain of Jordan*, about 20 leagues from the south end of the Dead Sea, or 106 miles from the Jordan. Such a leap of Jordan would almost rival Dan's towards Bashan.

3. The relation of Pisgah to Nebo I have passed by, as it does not affect the site of the point of prospect. Siaghah "is fronting," or in sight of, Jericho (Deut. xxxiv), at 17 miles' distance; so is Talat el Benât, at 19 miles' distance. Further, the head of Pisgah (Num. xxi, 20), like that of Peor (xxiii, 28), is said to "look down upon" (R.V.) or project towards the Jeshimon or desert of Judah, on the west side of the Dead Sea. Herein Talat el Benât far excels Siaghah, being 288 feet higher, 6 miles further south, and 3 miles more to the west.

4. Examination will doubtless show that Tell es Shaghur is in sight from Talat el Benât.

5. Merj Ayun means (General Index) "the meadow or prairie of springs." Robinson ("Bibl. Res.") suggests that *Ayun* represents *Ijon*, and adds that the road through the Merj is "the most level of all the routes between Damascus and the coast" (Gen. xiv, 14, 15).

6. Jer. viii, 16: "The snorting of his horses was heard from Dan." An invader from the north would naturally traverse the Merj, while Tell el Kadi hardly seems to be in the way of the ordinary route.

7. The Huleh Plain is described in "Memoirs," I, 97, as "very fertile but malarious"; on the other hand, writers are unanimous as to the merits as well as beauty of the Merj. Thomson mentions "the pretty plain and noble fountain"; Porter "the beautiful plain and fields of corn and green meadows"; Bonar says ("Land of Promise," 462): "The region is mountainous in the extreme, but not bare. Wood, grass, and flowers meet us in all directions; the damp of the morning seems to bring out their odours, and as we passed along, the fragrance was refreshing—all the more because it was the smell of Lebanon."

With good reason, then, the five Danites passed by the swampy Huleh, and fixed their choice on the "very good land" of the breezy, fertile Merj, observant of the fact that the people of Laish were "quiet and secure," and might be attacked with impunity, being far from Zidon, having no friend to help them, *i.e.*, with "no deliverer" at hand (Judg. xviii, 28 and 7) to put the aggressors to shame, and having no dealings with (LXX) the Syrians of Rehob (Kulat esh Shukif (?) from שׁקף the *overlooking*

castle). Therefore with the wisdom of an adder and fury of a lion's whelp the Danites repeated Abram's attack at Dan "as men come to Hamath," acting as Simeon afterwards did in the south (1 Chron. iv, 39–43).

8. As to names. At Tell el Kadi both the fountain and stream bear the name of el-Leddân, possibly through a survival of early Christian belief that this was the site of Dan. It is said in "Heth and Moab," p. 236, that the mound near Tell el Kadi, called Tell el Ajjûl, or the "Hill of Calves," suggests a connection with Jeroboam's calf-worship. Ajjûl, however, occurs elsewhere.

Again, the city Nebo, on the Moab plateau, may have given its name to Jebel Neba, east of Siaghah. As the ascent to this part is called *Tal'at es Safa*, the field close to the cairn of Nebo is taken ("Heth and Moab," pp. 129, 130) to be the "Field of Zophim, top of Pisgah" (Num. xxiii, 14). Happily Talât el Benât also has its *Zophim* close at hand, in Wadi *Tuleil'at es Safa* marked on the American map (Palestine Exploration Society, 1875, p. 32).

From Jebel Neba (2,643 feet) parts of Jerusalem are said to be in sight. The distance is 31 miles. It would seem there that a better view is to be gained of the Holy City from Talât el Benât (2,579 feet), as the distance is four miles less, and the decline of the Olivet ridge southwards admits an ampler view from the site of the *new* Pisgah, six miles south of Jebel Neba.

Moses asked (Deut. iii, 25, R.V.) to see "that goodly mountain," which (according to Poole) may mean Lebanon or Moriah or the mountainous region. If Moses meant *this mountain* of Psalm lxxviii, 54, examination may yet prove that it was from Talât el Benât that he beheld the desire of his eyes.

Remarks on Mr. Birch's Paper.

By Colonel Conder, R.E.

There is a drawing of Lot's view from near Bethel in my "Palestine" (Philip and Sons). The south end of the Dead Sea cannot be seen. The sketch was made on the spot with a view to this question.

I believe Baal Gad to have lain on the north slopes of Hermon, which seems to me to suit both Biblical and monumental notices. *See Quarterly Statement*, and ("Tell Amarna Tablets"). The probable site being *'Ain Jideideh.*

Tell el Kâdy is not visible from Siâghah, I believe. It was looked for through the 8-inch theodolite in 1881. *Kady* has not a letter in common with Gad, the *y* is a radical; it represents the Hebrew *Katzi*, "judge"; and is spelt with *dad* (*Tsade*) not with *daleth.* The view from *Siâghah* will be found, I believe (if the survey trigonometrical books are

examined), not to include Ijon, which, moreover, is concealed by higher ground in Galilee.

My remarks as to the view from Jebel Osh'a are from notes and sketches made on the spot. (*See Quarterly Statement*, 1882, and "Heth and Moab.")

ON THE PRESSURE OF THE ATMOSPHERE AT JERUSALEM.

By James Glaisher, F.R.S.

Jerusalem is situated in latitude 31° 46′ 40″ N. and longitude 35° 13′ 30″ E., and is about 2,500 feet above the level of the Mediterranean Sea. The observations of atmospheric pressure were began in the year 1861 by Dr. Chaplin, and continued by him till the end of the year 1881. The results of Dr. Chaplin's observations were published in the *Quarterly Statement* for January, 1883. From 1882 the observations have been under the superintendence of the Palestine Exploration Fund. They were forwarded at the end of each year to the Society, but remained unreduced for some years; recently they have been sent to me at the end of each year. The results from 1882 to 1896 have been published in the *Quarterly Statements* between July, 1893, and January, 1898. So far as I can learn, the barometer has never been moved since 1861. By extracting from these published results the highest barometer reading in each month the following table has been formed:—

TABLE I.—Showing the highest reading of the barometer, corrected to 32° Fahrenheit, in every month in the 15 years 1882 to 1896. Observations taken at 9 A.M.

Months.	YEARS.															Means of 15 years.
	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	
	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.
January... ...	27·721	27·542	27·668	27·616	27·587	27·708	27·602	27·561	27·613	27·599	27·604	27·538	27·563	27·687	27·598	27·620
February ...	27·393	27·574	27·630	27·552	27·582	27·709	27·630	27·621	27·546	27·574	27·521	27·569	27·528	27·509	27·620	27·589
March	27·618	27·609	27·619	27·557	27·573	27·557	27·627	27·562	27·489	27·555	27·493	27·512	27·578	27·455	27·438	27·556
April	27·625	27·527	27·510	27·506	27·502	27·551	27·491	27·519	27·485	27·557	27·458	27·531	27·512	27·537	27·594	27·527
May	27·504	27·467	27·434	27·446	27·594	27·635	27·472	27·523	27·497	27·424	27·522	27·449	27·435	27·551	27·481	27·490
June	27·472	27·403	27·460	27·410	27·434	27·430	27·396	27·466	27·423	27·455	27·421	27·480	27·420	27·478	27·443	27·439
July	27·358	27·346	27·443	27·403	27·345	27·315	27·329	27·381	27·292	27·475	27·317	27·296	27·378	27·345	27·375	27·360
August	27·399	27·409	27·378	27·364	27·368	27·321	27·372	27·356	27·349	27·374	27·342	27·420	27·395	27·325	27·439	27·374
September ...	27·560	27·530	27·453	27·515	27·501	27·536	27·486	27·469	27·496	27·462	27·463	27·402	27·472	27·493	27·491	27·492
October	27·537	27·530	27·539	27·575	27·512	27·578	27·558	27·626	27·598	27·501	27·544	27·556	27·607	27·508	27·583	27·561
November ...	27·573	27·580	27·631	27·582	27·623	27·576	27·600	27·616	27·577	27·619	27·537	27·668	27·499	27·632	27·656	27·602
December ...	27·617	27·613	27·637	27·616	27·656	27·615	27·734	27·673	27·533	27·737	27·617	27·583	27·526	27·647	27·671	27·631
Means ...	27·556	27·511	27·538	27·512	27·523	27·548	27·522	27·531	27·484	27·523	27·487	27·509	27·493	27·519	27·533	27·520

The highest reading of the barometer was above 27·500 inches in every January, February, October, and December, 14 times in November, 12 in April, 11 in March, 6 in May, and 5 in September; it was below 27·500 inches in every June, July, and August. The highest reading in the 15 years was 27·737 inches, in December, 1891.

By taking out of Table I the extreme readings in each month, the highest readings have varied—

	ins.		ins.
In January	from 27·721	in 1882 to	27·538 in 1893
February	„ 27·709	„ 1887 „	27·509 „ 1895
March	„ 27·627	„ 1888 „	27·438 „ 1896
April	„ 27·625	„ 1882 „	27·458 „ 1892
May	„ 27·635	„ 1887 „	27·407 „ 1890
June	„ 27·480	„ 1893 „	27·396 „ 1888
July	„ 27·475	„ 1891 „	27·292 „ 1890
August	„ 27·439	„ 1896 „	27·321 „ 1887
September	„ 27·586	„ 1887 „	27·402 „ 1893
October	„ 27·626	„ 1889 „	27·501 „ 1891
November	„ 27·692	„ 1895 „	27·499 „ 1894
December	„ 27·737	„ 1891 „	27·526 „ 1894

The differences of readings in each month for 15 years were small, the largest was 0·228 inch, in May, the next in order was 0·211 inch, in December; the smallest was 0·084 inch, in June, and the next in order was 0·118 inch, in August.

By extracting from Table I the extreme readings in each year it is found that the highest readings have varied—

	ins.		ins.
In 1882, from	27·721	in January	to 27·358 in July.
1883 „	27·613	„ December	„ 27·346 „ July.
1884 „	27·668	„ January	„ 27·378 „ August.
1885 „	27·616	„ Jan. & Dec.	„ 27·364 „ August.
1886 „	27·656	„ December	„ 27·345 „ July.
1887 „	27·709	„ February	„ 27·315 „ July.
1888 „	27·734	„ December	„ 27·329 „ July.
1889 „	27·673	„ December	„ 27·356 „ August.
1890 „	27·613	„ January	„ 27·292 „ July.
1891 „	27·737	„ December	„ 27·374 „ August.
1892 „	27·617	„ December	„ 27·317 „ July.
1893 „	27·668	„ November	„ 27·296 „ July.
1894 „	27·607	„ October	„ 27·378 „ July.
1895 „	27·692	„ November	„ 27·325 „ August.
1896 „	27·671	„ December	„ 27·375 „ July.

The difference between the highest reading in July or August and the highest reading in the same year, was the greatest in the year 1888,

when it was 0·405 inch; the next in order was 0·394 inch, in the year 1887; the smallest was 0·229 inch, in 1894; and the next in order was 0·252 inch, in 1885.

The highest reading for the year in the 15 years has occurred in—

January, four times, viz., in 1882, 1884, 1885, and 1890; the highest was 27·721 inches, in 1882.

February, once; 27·709 inches, in 1887.

October, once; 27·607 inches, in 1894.

November, twice, in 1893 and 1895; the highest was 27·692 inches, in 1895.

December, eight times, in 1883, 1885, 1886, 1888, 1889, 1891, 1892, and 1896; the highest was 27·737 inches, in 1891.

In the year 1885 the highest readings in January and December were alike.

The numbers at the foot of the columns in Table I give the mean of the highest monthly readings in each year; the highest was 27·556 inches, in 1882; and the lowest was 27·484 inches, in 1890.

The numbers in the last column of Table I show the mean of the 15 readings. The highest was 27·631 inches, in December; and the next in order 27·620 inches in January; then decreasing month by month to the lowest, 27·360 inches, in July; and then increasing month by month to December. The mean of all the maximum readings was 27·520 inches.

By selecting from the published results the lowest barometer reading in each month, the following table was formed :—

TABLE II.—Showing the lowest reading of the barometer, corrected to 32° Fahrenheit, in every month in the 15 years, 1882 to 1896. Observations taken at 9 A.M.

Months.	YEARS.															Means of 15 years.
	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	
	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.
January... ..	27·314	27·122	27·137	27·134	27·182	26·978	27·174	27·268	27·133	27·096	27·132	27·102	27·268	27·236	27·036	27·154
February ...	27·177	27·122	27·217	27·221	27·103	27·231	27·046	27·262	27·116	27·025	27·100	27·279	27·060	27·163	27·152	27·152
March	27·182	27·198	27·110	26·990	27·086	26·995	27·194	27·047	27·127	27·283	27·158	27·060	27·071	27·018	26·970	27·099
April	27·108	27·172	26·997	27·043	27·146	27·078	27·169	27·246	27·085	27·271	27·192	27·162	27·033	27·079	27·126	27·124
May	27·118	27·198	27·193	27·245	27·301	27·253	27·259	27·207	27·226	27·164	27·136	27·093	27·223	27·252	27·120	27·199
June	27·202	27·259	27·298	27·211	27·189	27·246	27·220	27·207	27·218	27·251	27·224	27·195	27·242	27·260	27·220	27·229
July	27·161	27·189	27·182	27·191	27·149	27·186	27·189	27·099	27·127	27·169	27·125	27·167	27·173	27·161	27·153	27·161
August	27·191	27·260	27·234	27·155	27·103	27·174	27·200	27·190	27·180	27·200	27·211	27·220	27·192	27·162	27·212	27·192
September ...	27·298	27·236	27·234	27·268	27·264	27·253	27·280	27·224	27·321	27·273	27·246	27·265	27·297	27·245	27·266	27·265
October	27·323	27·370	27·311	27·360	27·210	27·377	27·353	27·389	27·329	27·323	27·286	27·313	27·395	27·313	27·357	27·341
November ...	27·320	27·217	27·359	27·348	27·331	27·239	27·090	27·353	27·271	27·174	27·271	27·393	27·303	27·237	27·282	27·287
December ...	27·213	27·238	27·360	27·275	27·280	27·263	27·020	27·257	27·170	27·252	27·126	27·026	27·282	27·173	27·226	27·211
Means... ...	27·217	27·215	27·219	27·203	27·204	27·197	27·183	27·229	27·192	27·207	27·183	27·190	27·212	27·191	27·177	27·201

The reading of the barometer during the 15 years was below 27 inches, three times in March, and once in both January and April ; there was no reading so low as 27 inches in the months of February, May, June, July, August, September, October, November, and December The lowest reading in the 15 years was 26·970 inches, in March, 1896.

Selecting from Table II the extreme readings in each month, the lowest readings have varied—

	ins.		ins.	
In January	from 26·978	in 1887	to 27·314	in 1882
February	„ 27·025	„ 1891	„ 27·279	„ 1893
March	„ 26·970	„ 1896	„ 27·283	„ 1891
April	„ 26·997	„ 1884	„ 27·271	„ 1891
May	„ 27·093	„ 1893	„ 27·301	„ 1886
June	„ 27·189	„ 1886	„ 27·298	„ 1884
July	„ 27·099	„ 1889	„ 27·191	„ 1885
August	„ 27·103	„ 1886	„ 27·260	„ 1883
September	„ 27·224	„ 1889	„ 27·321	„ 1890
October	„ 27·286	„ 1892	„ 27·395	„ 1894
November	„ 27·090	„ 1888	„ 27·393	„ 1893
December	„ 27·020	„ 1888	„ 27·360	„ 1884

The largest difference between these readings was 0·340 inch, in December ; and the next in order was 0·336 inch, in January. The smallest were 0·092 inch, in July, and 0·097 inch, in September.

By selecting the extreme readings in each year, the lowest readings have varied—

	ins.		ins.	
In 1882, from	27·108	in April	to 27·323	in October.
1883 „	27·122	„ Jan. & Feb.	„ 27·370	„ October.
1884 „	26·997	„ April	„ 27·360	„ December.
1885 „	26·990	„ March	„ 27·360	„ October.
1886 „	27·086	„ March	„ 27·331	„ November.
1887 „	26·978	„ January	„ 27·377	„ October.
1888 „	27·020	„ December	„ 27·353	„ October.
1889 „	27·047	„ March	„ 27·389	„ October.
1890 „	27·085	„ April	„ 27·329	„ October.
1891 „	27·025	„ February	„ 27·323	„ October.
1892 „	27·100	„ February	„ 27·286	„ October.
1893 „	27·026	„ December	„ 27·393	„ November.
1894 „	27·033	„ April	„ 27·395	„ October.
1895 „	27·018	„ March	„ 27·313	„ October.
1896 „	26·970	„ March	„ 27·357	„ October.

The difference between the lowest reading in the month of October, November, or December and the lowest reading in the same year, was the largest in the year 1887, when it was 0·399 inch ; the next in order

being 0·387 inch, in 1896; and the smallest, 0·186 inch, in 1892; the next in order being 0·215 inch, in 1882.

The lowest reading for the year occurred in—

January, twice, viz., in 1883 and 1887; the lowest was 26·978 inches, in 1887.

February, three times, in 1883, 1891, and 1892; the lowest was 27·025 inches, in 1891.

March, five times, in 1885, 1886, 1889, 1895, and 1896; the lowest was 26·970 inches, in 1896.

April, four times, in 1882, 1884, 1890, and 1894; the lowest was 26·997 inches, in 1884.

December, twice, in 1888 and 1893; the lowest was 27·020 inches, in 1888.

In the year 1883, the lowest reading, viz., 27·122 inches, occurred in both January and February.

The numbers at the foot of the columns in Table II give the mean of the lowest monthly readings in each year. The lowest was 27·177 inches, in 1896; and the highest, 27·229 inches, in 1889.

The numbers in the last column of Table II show the mean of the 15 readings. The lowest was 27·099 inches, in March, increasing month by month to 27·229 inches, in June; the mean for July was 27·161 inches, then increasing month by month to 27·341 inches, in October, and decreasing again to the lowest in March.

By taking the differences between the numbers in Table I and Table II the next table is formed :—

TABLE III.—Showing the range of barometer readings in every month in the 15 years, 1882 to 1896. Observations taken at 9 A.M.

Months.	YEARS.															Means of 15 years.
	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
January ...	0·407	0·420	0·531	0·482	0·405	0·730	0·428	0·293	0·480	0·503	0·472	0·436	0·295	0·451	0·562	0·466
February ...	0·516	0·452	0·413	0·331	0·479	0·478	0·554	0·359	0·430	0·549	0·421	0·290	0·468	0·316	0·468	0·437
March	0·436	0·411	0·509	0·567	0·487	0·562	0·433	0·515	0·362	0·272	0·338	0·552	0·507	0·437	0·468	0·457
April	0·517	0·355	0·513	0·463	0·356	0·473	0·322	0·273	0·400	0·286	0·266	0·369	0·479	0·458	0·468	0·400
May	0·386	0·269	0·241	0·201	0·293	0·382	0·213	0·316	0·181	0·260	0·392	0·356	0·242	0·299	0·361	0·291
June	0·270	0·144	0·162	0·199	0·245	0·184	0·176	0·259	0·205	0·204	0·197	0·285	0·178	0·218	0·223	0·210
July	0·197	0·157	0·261	0·212	0·196	0·129	0·140	0·282	0·165	0·306	0·192	0·129	0·205	0·184	0·222	0·198
August	0·208	0·149	0·144	0·209	0·265	0·147	0·172	0·166	0·169	0·174	0·131	0·200	0·203	0·163	0·227	0·182
September ...	0·262	0·297	0·219	0·247	0·237	0·333	0·206	0·245	0·175	0·189	0·217	0·137	0·175	0·248	0·225	0·227
October	0·214	0·160	0·288	0·215	0·203	0·201	0·205	0·237	0·269	0·178	0·258	0·243	0·212	0·195	0·232	0·221
November ..	0·253	0·363	0·272	0·234	0·292	0·237	0·510	0·263	0·306	0·445	0·266	0·275	0·196	0·455	0·374	0·316
December ...	0·404	0·375	0·277	0·340	0·376	0·352	0·714	0·416	0·363	0·485	0·491	0·557	0·244	0·474	0·445	0·421
Means... ...	0·340	0·296	0·319	0·308	0·319	0·351	0·339	0·302	0·292	0·321	0·303	0·319	0·281	0·327	0·356	0·318

The greatest ranges appear in the winter and spring months, and the least in the summer and autumn months. The greatest monthly range in the 15 years was 0·730 inch, in January, 1887 ; and the next in order was 0·714 inch, in December, 1888 ; the least range was 0·129 inch, in July, 1887 and 1893 ; and the next in order was 0·131 inch, in August, 1892.

By selecting from Table III the smallest and largest ranges in each month, the range of readings have varied—

	in.		in.	
In January	from 0·293	in 1889	to 0·730	in 1887
February	„ 0·290	„ 1893	„ 0·554	„ 1888
March	„ 0·272	„ 1891	„ 0·567	„ 1885
April	„ 0·266	„ 1892	„ 0·517	„ 1882
May	„ 0·181	„ 1890	„ 0·386	„ 1882
June	„ 0·144	„ 1883	„ 0·285	„ 1893
July	„ 0·129	„ 1887 & 1893	„ 0·306	„ 1891
August	„ 0·131	„ 1892	„ 0·265	„ 1886
September	„ 0·137	„ 1893	„ 0·333	„ 1887
October	„ 0·160	„ 1883	„ 0·288	„ 1884
November	„ 0·196	„ 1894	„ 0·510	„ 1888
December	„ 0·244	„ 1894	„ 0·714	„ 1888

The greatest difference of range was 0·470 inch, in December ; the next in order was 0·437 inch, in January. The smallest difference was 0·128 inch, in October ; the next in order was 0·134 inch, in August.

In like manner the monthly range of pressure has varied—

	in.		in.	
In 1882, from	0·197	in July	to 0·517	in April.
1883 „	0·144	„ June	„ 0·452	„ February.
1884 „	0·144	„ August	„ 0·531	„ January.
1885 „	0·199	„ June	„ 0·567	„ March.
1886 „	0·196	„ July	„ 0·487	„ March.
1887 „	0·129	„ July	„ 0·730	„ January.
1888 „	0·140	„ July	„ 0·714	„ December.
1889 „	0·166	„ August	„ 0·515	„ March.
1890 „	0·165	„ July	„ 0·480	„ January.
1891 „	0·174	„ August	„ 0·549	„ February.
1892 „	0·131	„ August	„ 0·491	„ December.
1893 „	0·129	„ July	„ 0·557	„ December.
1894 „	0·175	„ September	„ 0·507	„ March.
1895 „	0·163	„ August	„ 0·474	„ December.
1896 „	0·222	„ July	„ 0·562	„ January.

The greatest monthly range in the year has occurred in—

January, four times, viz., in 1884, 1887, 1890, and 1893; the greatest was 0·730 inch, in 1887.

February, twice, in 1883 and 1891; the greatest was 0·549 inch, in 1891.

March, four times, in 1885, 1886, 1889, and 1894; the greatest was 0·567 inch, in 1885.

April, once; 0·517 inch, in 1882.

December, four times, in 1888, 1892, 1893, and 1895; the greatest was 0·714 inch, in 1888.

The least monthly range in the year has occurred in—

June, twice, in 1883 and 1885; the least was 0·144 inch, in 1883.

July, seven times, in 1882, 1886, 1887, 1888, 1890, 1893, and 1896; the least was 0·129 inch, in 1887 and 1893.

August, five times, in 1884, 1889, 1891, 1892, and 1895; the least was 0·131 inch, in 1892.

September, once; 0·175 inch, in 1894.

The numbers at the foot of the columns in Table III give the mean monthly range in each year. The largest was 0·356 inch, in 1896; and the smallest was 0·281 inch, in 1894.

The numbers in the last column of Table III show the mean range in each month. The largest was 0·466 inch, in January; and the next in order, 0·457 inch, in March, decreasing month by month to the smallest, 0·182 inch, in August, then increasing month by month to January. The mean monthly range for the 15 years was 0·318 inch.

By selecting in each year from Table I the highest reading in the year, and from Table II the lowest reading, the range of readings in the year is found as follows:—

	Highest.	Lowest.	Annual Range.
	ins.	ins.	in.
In 1882	27·721	27·108	0·613
1883	27·613	27·122	0·491
1884	27·668	26·997	0·671
1885	27·616	26·990	0·626
1886	27·656	27·086	0·570
1887	27·709	26·978	0·731
1888	27·734	27·020	0·714
1889	27·673	27·047	0·626
1890	27·613	27·085	0·528
1891	27·737	27·025	0·712
1892	27·617	27·100	0·517
1893	27·668	27·026	0·642
1894	27·607	27·033	0·574
1895	27·692	27·018	0·674
1896	27·671	26·970	0·701

(*To face p.* 131.)

TABLE IV.—Showing the mean reading of the Barometer corrected for temperature in every month, at Jerusalem, from 1861 to 1896. Observations taken daily at 9 A.M.

Months.	YEARS.																																		Mean for 36 years.
	1861	1862	1863	1864	1865	1866	1867	1868	1869	1870	1871	1872	1873	1874	1875	1876	1877	1878	1879	1880	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	
	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.
January ..	27·405	27·448	27·480	27·472	27·431	27·435	27·466	27·456	27·447	27·464	27·481	27·450	27·512	27·436	27·468	27·519	27·448	27·469	27·487	27·497	27·505	27·516	27·380	27·442	27·394	27·435	27·375	27·420	27·431	27·436	27·415	27·432	27·298	27·336	27·465	27·365	27·442
February ...	27·566	27·443	27·488	27·430	27·332	27·437	27·507	27·383	27·464	27·456	27·454	27·448	27·426	27·426	27·368	27·426	27·439	27·442	27·489	27·429	27·329	27·460	27·419	27·386	27·442	27·356	27·455	27·368	27·441	27·380	27·387	27·369	27·447	27·347	27·379	27·450	27·424
March	27·406	27·452	—	27·411	27·393	27·400	27·317	27·363	27·324	27·399	27·416	27·379	27·315	27·371	27·335	27·353	27·458	27·420	27·388	27·378	27·419	27·445	27·406	27·381	27·369	27·366	27·416	27·424	27·399	27·331	27·417	27·372	27·330	27·342	27·308	27·300	27·378
April	27·420	27·420	27·341	27·306	27·412	27·357	27·339	27·361	27·404	27·389	27·347	27·355	27·397	27·402	27·418	27·396	27·346	27·344	27·415	27·349	27·369	27·333	27·336	27·348	27·319	27·379	27·338	27·332	27·388	27·209	27·398	27·320	27·378	27·339	27·331	27·380	27·376
May	27·421	27·474	27·470	27·468	27·353	27·374	27·345	27·395	27·378	27·411	27·379	27·378	27·384	27·417	27·401	27·383	27·417	27·352	27·404	27·370	27·371	27·358	27·354	27·355	27·365	27·423	27·398	27·359	27·329	27·365	27·299	27·325	27·341	27·362	27·405	27·345	27·381
June	27·397	27·400	27·405	27·329	27·466	27·317	27·345	27·308	27·387	27·331	27·319	27·376	27·373	27·354	27·319	27·386	27·397	27·326	27·301	27·331	27·382	27·346	27·321	27·287	27·332	27·323	27·319	27·326	27·329	27·322	27·364	27·310	27·434	27·338	27·361	27·334	27·350
July	27·333	27·379	27·360	27·279	27·289	27·267	27·276	27·282	27·306	27·255	27·256	27·281	27·262	27·242	27·276	27·282	27·328	27·188	27·268	27·284	27·296	27·272	27·282	27·285	27·286	27·251	27·254	27·275	27·236	27·217	27·268	27·250	27·239	27·264	27·277	27·289	27·276
August	27·349	27·378	27·399	27·300	27·277	27·281	27·295	27·306	27·319	27·279	27·292	27·281	27·314	27·301	27·321	27·308	27·356	27·271	27·285	27·317	27·281	27·304	27·314	27·297	27·257	27·268	27·248	27·289	27·260	27·262	27·306	27·280	27·309	27·284	27·247	27·303	27·298
September ...	27·428	27·445	27·471	27·384	27·388	27·351	27·354	27·394	27·368	27·401	27·373	27·350	27·373	27·385	27·409	27·383	27·420	27·322	27·385	27·398	27·374	27·402	27·413	27·373	27·371	27·391	27·371	27·381	27·348	27·398	27·387	27·357	27·334	27·371	27·389	27·355	27·383
October	27·511	27·499	27·530	27·454	27·486	27·437	27·447	27·457	27·505	27·447	27·403	27·441	27·456	27·457	27·452	27·427	27·450	27·425	27·480	27·488	27·456	27·432	27·490	27·449	27·467	27·442	27·478	27·441	27·469	27·465	27·407	27·419	27·416	27·485	27·395	27·453	27·455
November ...	27·549	27·442	27·502	27·428	27·435	27·427	27·476	27·459	27·499	27·543	27·461	27·464	27·432	27·458	27·428	27·449	27·452	27·539	27·493	27·493	27·441	27·456	27·448	27·470	27·448	27·482	27·462	27·420	27·489	27·439	27·472	27·405	27·515	27·398	27·455	27·482	27·464
December ...	27·421	27·482	27·413	27·448	27·444	27·468	27·402	27·473	27·523	27·492	27·483	27·470	27·467	27·490	27·471	27·511	27·453	27·523	27·459	27·426	27·451	27·447	27·442	27·486	27·452	27·504	27·452	27·463	27·454	27·386	27·463	27·463	27·389	27·416	27·429	27·494	27·458
Means... ...	27·434	27·438	27·442	27·392	27·392	27·379	27·380	27·386	27·410	27·405	27·388	27·389	27·393	27·394	27·388	27·401	27·413	27·385	27·400	27·396	27·389	27·398	27·384	27·380	27·374	27·385	27·381	27·375	27·381	27·359	27·382	27·358	27·369	27·357	27·370	27·379	27·390

The highest reading in the 15 years was 27·737 inches, in December, 1891 ; the lowest was 26·970 inches, in December, 1896. The extreme range in the 15 years was 0·767 inch.

The monthly mean reading of the barometer from the year 1861 to 1881 in Table IV has been copied from Dr. Chaplin's paper on the "Climate of Jerusalem," published in the *Quarterly Statement* for January, 1883, and those from 1882 to 1896 have been taken from my reports published in the *Quarterly Statements* between July, 1893, and January, 1898.

From Table IV it will be seen that the highest monthly mean reading in the 36 years was 27·566 inches, in February, 1861 ; and the next in order were 27·549 inches, in November of the same year, and 27·543 inches, in November, 1870. The lowest mean monthly reading was 27·188 inches, in July, 1878 ; and the next in order were 27·217 inches, in July, 1890, and 27·236 inches, in July, 1889.

The monthly mean reading varied—

	ins.		ins.	
In January	from 27·298	in 1893	to 27·519	in 1876
February	„ 27·329	„ 1881	„ 27·566	„ 1861
March	„ 27·300	„ 1896	„ 27·458	„ 1877
April	„ 27·306	„ 1864	„ 27·420	„ 1861 & 1862
May	„ 27·299	„ 1891	„ 27·474	„ 1862
June	„ 27·287	„ 1884	„ 27·466	„ 1865
July	„ 27·188	„ 1878	„ 27·379	„ 1862
August	„ 27·247	„ 1895	„ 27·399	„ 1863
September	„ 27·322	„ 1878	„ 27·471	„ 1863
October	„ 27·395	„ 1895	„ 27·530	„ 1863
November	„ 27·398	„ 1894	„ 27·549	„ 1861
December	„ 27·386	„ 1890	„ 27·523	„ 1878

These differences of mean monthly readings were small ; the least difference was 0·114 inch, in April ; the next in order was 0·135 inch, in October. The largest was 0·237 inch, in February ; and the next in order was 0·221 inch, in January.

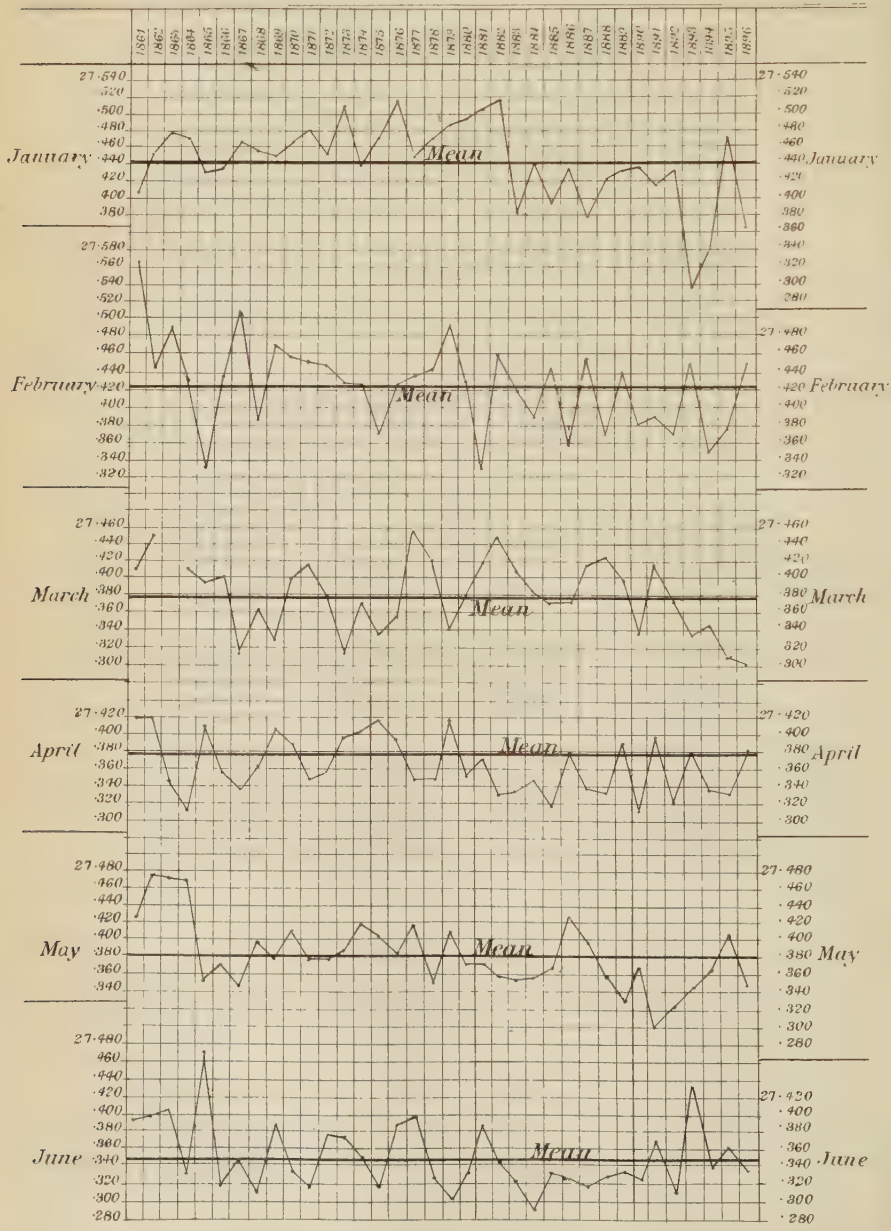
By extracting from Table IV the highest and lowest mean reading in every year, the monthly mean has varied :—

		ins.		ins.	
In 1861	from	27·566	in February to	27·333	in July.
1862	„	27·499	October	27·378	August.
1863	„	27·530	October	27·360	July.
1864	„	27·472	January	27·279	July.
1865	„	27·486	October	27·277	August.
1866	„	27·468	December	27·267	July.
1867	„	27·507	February	27·276	July.
1868	„	27·473	December	27·282	July.
1869	„	27·523	December	27·306	July.
1870	„	27·543	November	27·255	July.
1871	„	27·483	December	27·256	July.
1872	„	27·470	December	27·281	July and August.
1873	„	27·512	January	27·262	July.
1874	„	27·490	December	27·242	July.
1875	„	27·471	December	27·276	July.
1876	„	27·519	January	27·282	July.
1877	„	27·458	March	27·328	July.
1878	„	27·539	November	27·188	July.
1879	„	27·493	November	27·268	July.
1880	„	27·497	January	27·284	July.
1881	„	27·505	January	27·181	August.
1882	„	27·516	January	27·272	July.
1883	„	27·490	October	27·282	July.
1884	„	27·486	December	27·285	July.
1885	„	27·467	October	27·257	August.
1886	„	27·504	December	27·251	July.
1887	„	27·462	November	27·248	August.
1888	„	27·463	December	27·275	July.
1889	„	27·489	November	27·236	July.
1890	„	27·465	October	27·217	July.
1891	„	27·472	November	27·268	July.
1892	„	27·463	December	27·250	July.
1893	„	27·515	November	27·239	July.
1894	„	27·485	October	27·264	July.
1895	„	27·465	January	27·247	August.
1896	„	27·494	December	27·289	July.

The smallest difference between the highest and lowest means in the same year was 0·121 inch, in 1862; the next in order was 0·130 inch, in 1877. The largest difference was 0·351 inch, in 1878; and the next in order was 0·288 inch, in 1870.

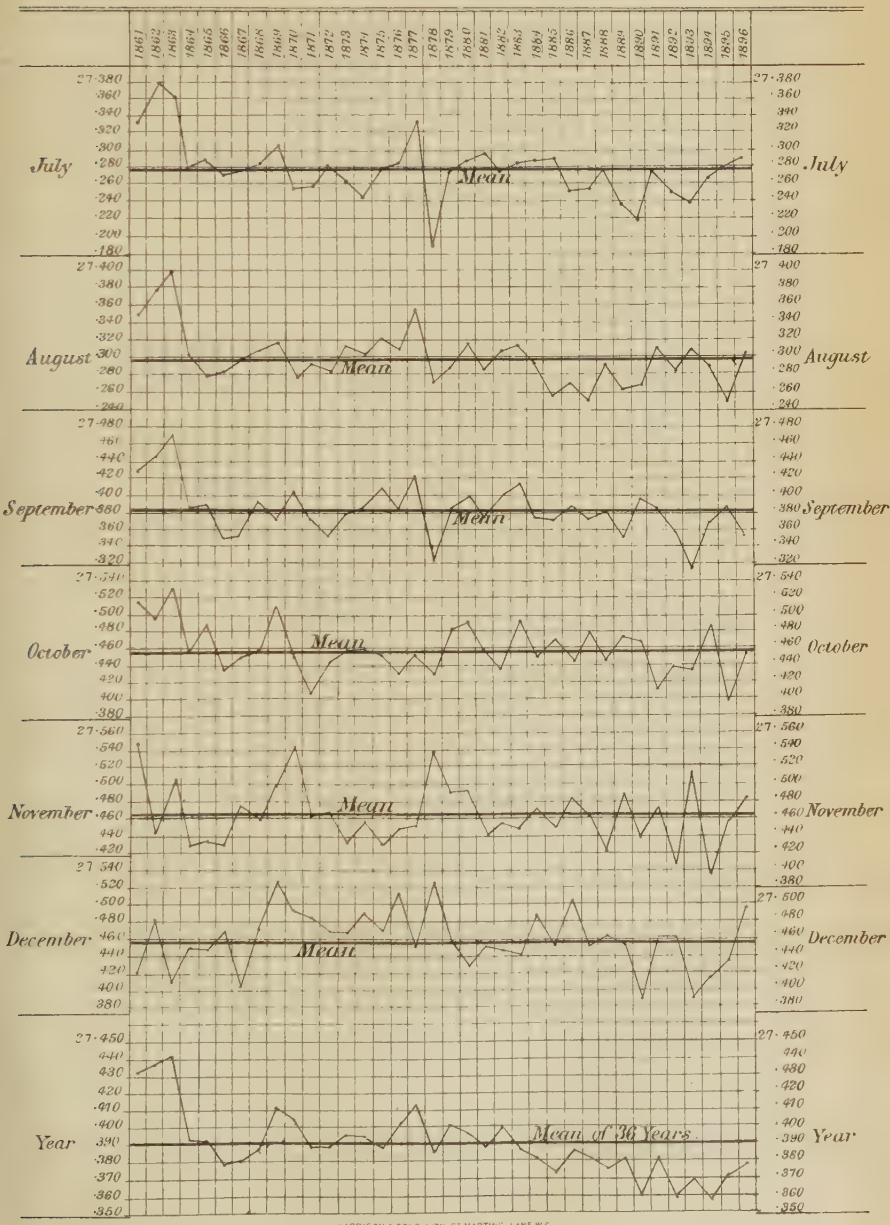
The highest monthly reading of the barometer in the year has occurred in—

DIAGRAMS SHOWING THE MEAN READING OF THE BAROMETER IN EVERY MONTH AND YEAR AND THE DEPARTURE ABOVE OR BELOW THE MEAN. FROM THE YEAR 1861 TO 1896.



HARRISON & SONS, LITH. ST MARTINS LANE, W.C.

DIAGRAMS SHOWING THE MEAN READING OF THE BAROMETER IN EVERY MONTH AND YEAR AND THE DEPARTURE ABOVE OR BELOW THE MEAN. FROM THE YEAR 1861 TO 1896.



HARRISON & SONS, LITH. ST MARTIN'S LANE, W.C.

(*To face p.* 133.)

TABLE V.—Showing the departure of the mean reading of the barometer in every month above or below its mean for 36 years.

Months.	YEARS.																																		
	1861	1862	1863	1864	1865	1866	1867	1868	1869	1870	1871	1872	1873	1874	1875	1876	1877	1878	1879	1880	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
January ...	− ·037	+ ·006	+ ·038	+ ·030	− ·011	− ·007	+ ·024	+ ·014	+ ·005	+ ·022	+ ·039	+ ·008	+ ·070	− ·006	+ ·026	+ ·077	+ ·006	+ ·027	+ ·045	+ ·055	+ ·063	+ ·074	− ·062	·000	− ·048	− ·007	− ·067	− ·022	− ·011	− ·006	− ·027	− ·010	− ·144	− ·106	+ ·023	− ·077
February ...	+ ·142	+ ·019	+ ·064	+ ·006	− ·086	+ ·013	+ ·093	− ·041	+ ·040	+ ·032	+ ·030	+ ·024	+ ·002	+ ·002	− ·056	+ ·002	+ ·015	+ ·018	+ ·065	+ ·005	− ·095	+ ·042	− ·005	− ·038	+ ·018	− ·068	+ ·031	− ·036	+ ·017	− ·044	− ·037	− ·055	+ ·023	− ·077	− ·045	+ ·026
March	+ ·028	+ ·074	—	+ ·033	+ ·015	+ ·022	− ·061	− ·015	− ·054	+ ·021	+ ·038	+ ·001	− ·063	− ·007	− ·043	− ·025	+ ·080	+ ·042	− ·040	·000	+ ·041	+ ·067	+ ·028	+ ·003	− ·009	− ·012	+ ·038	+ ·046	+ ·021	− ·047	+ ·039	− ·006	− ·048	− ·036	− ·070	− ·078
April	+ ·044	+ ·044	− ·035	− ·070	+ ·036	− ·019	− ·037	− ·015	+ ·028	+ ·013	− ·029	− ·021	+ ·021	+ ·026	+ ·042	+ ·020	− ·030	− ·032	+ ·039	− ·027	− ·007	− ·043	− ·040	− ·028	− ·057	+ ·003	− ·038	− ·044	+ ·012	− ·067	+ ·022	− ·056	+ ·002	− ·037	− ·045	+ ·004
May	+ ·040	+ ·093	+ ·089	+ ·087	− ·028	− ·007	− ·036	+ ·014	− ·003	+ ·030	− ·002	− ·003	+ ·003	+ ·036	+ ·020	+ ·002	+ ·036	− ·029	+ ·023	− ·011	− ·010	− ·023	− ·027	− ·026	− ·016	+ ·042	+ ·017	− ·022	− ·052	− ·016	− ·082	− ·056	− ·040	− ·019	+ ·024	− ·036
June	+ ·047	+ ·050	+ ·055	− ·022	+ ·116	− ·033	− ·005	− ·042	+ ·037	− ·019	− ·031	+ ·026	+ ·023	+ ·004	− ·031	+ ·036	+ ·047	− ·024	− ·049	− ·019	+ ·032	− ·004	− ·029	− ·063	− ·018	− ·027	− ·031	− ·024	− ·021	− ·028	+ ·014	− ·010	+ ·084	− ·012	+ ·011	− ·016
July	+ ·057	+ ·103	+ ·084	+ ·003	+ ·013	− ·009	·000	+ ·006	+ ·030	− ·021	− ·020	+ ·005	− ·014	− ·034	·000	+ ·006	+ ·052	− ·088	− ·008	+ ·008	+ ·020	− ·004	+ ·006	+ ·009	+ ·010	− ·025	− ·022	− ·001	− ·040	− ·059	− ·008	− ·026	− ·037	− ·012	+ ·001	+ ·013
August	+ ·051	+ ·080	+ ·101	+ ·002	− ·021	− ·017	− ·003	+ ·008	+ ·021	− ·019	− ·006	− ·017	+ ·016	+ ·003	+ ·023	+ ·010	+ ·058	− ·027	− ·013	+ ·019	− ·017	+ ·006	+ ·016	− ·001	− ·041	− ·030	− ·050	− ·009	− ·038	− ·036	+ ·008	− ·018	+ ·011	− ·014	− ·051	+ ·005
September ...	+ ·045	+ ·062	+ ·088	+ ·001	+ ·005	− ·032	− ·029	+ ·011	− ·015	+ ·018	− ·010	− ·033	− ·005	+ ·002	+ ·026	·000	+ ·037	− ·061	+ ·002	+ ·015	− ·009	+ ·019	+ ·030	− ·010	− ·012	+ ·008	− ·012	− ·002	− ·035	+ ·015	+ ·004	− ·026	− ·049	− ·012	+ ·006	− ·028
October	+ ·056	+ ·044	+ ·075	− ·001	+ ·031	− ·018	− ·008	+ ·002	+ ·050	− ·008	− ·052	− ·014	+ ·001	+ ·002	− ·003	− ·028	− ·005	− ·030	+ ·025	+ ·033	+ ·001	− ·023	+ ·035	− ·006	+ ·012	− ·013	+ ·023	− ·014	+ ·014	+ ·010	− ·048	− ·036	− ·039	+ ·030	− ·060	− ·002
November ...	+ ·085	− ·022	+ ·038	− ·036	− ·029	− ·037	+ ·013	− ·005	+ ·035	+ ·079	− ·003	·000	− ·032	− ·006	− ·036	− ·015	− ·012	+ ·075	+ ·029	+ ·029	− ·023	− ·008	− ·016	+ ·006	− ·016	+ ·018	− ·002	− ·044	+ ·023	− ·025	+ ·008	− ·059	+ ·051	− ·066	− ·009	+ ·018
December ...	− ·037	+ ·024	− ·045	− ·010	− ·014	+ ·010	− ·056	+ ·015	+ ·065	+ ·034	+ ·025	+ ·012	+ ·009	+ ·032	+ ·013	+ ·053	− ·005	+ ·065	+ ·001	− ·032	− ·007	− ·011	− ·016	+ ·028	− ·006	+ ·046	− ·006	+ ·005	− ·004	− ·072	+ ·005	+ ·005	− ·069	− ·042	− ·029	+ ·036
Means... ...	+ ·043	+ ·048	+ ·050	+ ·002	+ ·002	− ·011	− ·010	− ·004	+ ·020	+ ·015	− ·002	− ·001	+ ·003	+ ·004	− ·002	+ ·011	+ ·023	− ·005	+ ·010	+ ·006	− ·001	+ ·008	− ·007	− ·010	− ·016	− ·005	− ·010	− ·016	− ·009	− ·031	− ·009	− ·032	− ·021	− ·034	− ·020	− ·011

The sign + indicates above the mean, and the sign − below the mean.

January, seven times, viz., in 1864, 1873, 1876, 1880, 1881, 1882, and 1895; the highest was 27·519 inches, in 1876.

February, twice, in 1861 and 1867; the highest was 27·566 inches, in 1861.

March, once; 27·458 inches, in 1877.

October, seven times, in 1862, 1863, 1865, 1883, 1885, 1890, and 1894; the highest was 27·530 inches, in 1863.

November, seven times, in 1870, 1878, 1879, 1887, 1889, 1891, and 1893; the highest was 27·543 inches, in 1870.

December, twelve times, in 1866, 1868, 1869, 1871, 1872, 1874, 1875, 1884, 1886, 1888, 1892, and 1896; the highest was 27·523 inches, in 1869.

The highest readings have, therefore, always been during the rainy season.

The lowest monthly mean reading in the year has occurred—

Once in both July and August, viz., in the year 1872, the reading being 27·281 inches.

In August in six years, viz., 1862, 1865, 1881, 1885, 1887, and 1895; the lowest was 27·247 inches, in 1865.

And in July in all other years; the lowest was 27·188 inches, in 1878.

The lowest readings of the barometer have thus always been in the rainless season.

The numbers at the foot of the columns in Table IV give the mean reading of the barometer for each year. The highest was 27·442 inches, in 1863; and the lowest, 27·357 inches, in 1894.

The three highest consecutive means are in the first three years, viz., 1861, 1862, and 1863, and their mean is 27·438 inches. The three lowest consecutive means are nearly at the end of the series, viz., in 1892, 1893, and 1894, and their mean is 27·361 inches. The mean of the first 12 years is 27·403 inches; of the second, 27·393 inches; and of the third is 27·373 inches, indicating a decreasing pressure.

The numbers in the last column of Table IV show the mean of the 36 monthly means. The highest was 27·464 inches, in November; and the lowest, 27·276 inches, in July. The mean atmospheric pressure for the 36 years was 27·390 inches.

By taking the difference between the numbers in the last column of Table IV and every reading in this table, the next table is formed.

In Table V there are six instances when the mean of the month has been the same as its average, viz., in January, 1884; March, 1880; July, 1867 and 1875; September, 1876; and November, 1872.

The greatest number of differences with plus (+) sign appear at the beginning of the table, and those with the minus (—) sign towards the end of the table.

The largest number with a + sign is 0·142 inch, in February, 1861;

and the next in order are 0·116 inch, in June, 1865; 0·103 inch, in July, 1862; 0·101 inch, in August, 1863; and 0·093 inch, in May, 1862, and February, 1865. All the remainder of + signs are below 0·090 inch.

The largest number with a − sign is 0·144 inch in January, 1893; the next in order are 0·106 inch, in January, 1894, and 0·095 inch, in February, 1881. All the remainder are less than 0·090 inch.

In the year 1861, 10 of the months have the + sign; in 1862, 11; in 1863 and 1869, each have 9; there are 8 in the years 1870, 1873, 1874, 1876, 1877, and 1879; and there are only four other years with so many as 7, viz., 1864, 1868, 1880, and 1891.

In the years 1892 and 1894, 11 of the months are affected with the − sign; in the years 1888 and 1890, there are 10; in 1866 and 1885, 9; in the years 1867, 1871, and 1887, 8; and there are 7 in the years 1878, 1881, 1882, 1883, 1884, 1886, 1889, 1893, and 1895.

In the bottom line of Table V it will be seen that the mean pressure for the year was above its average in the first 5 years, and was above in 9 years between 1866 and 1882; at or slightly below its average in 8 of these 17 years, and below in every year from 1883 to 1896, indicating a decreasing atmospheric pressure.

By laying down on diagrams every reading in Table IV, the departure from the mean in every month and the year is shown.

From the diagrams it will be seen that the atmospheric pressure, in the months from January to June, excepting March, was generally above its average for the first 20 years of the series, and chiefly below afterwards. In March it was above till the year 1891, and mostly below from 1892. In the months of July, August, and September the pressure was generally above till the year 1883, and below from the year 1884. In the months of October and November the excesses above, and deficiencies below their means nearly balanced each other, and in December the atmospheric pressure was generally above its average between the years 1868 and 1888, and mostly below from 1861 to 1867 and from 1889.

The diagram for the year shows that at the beginning of the series the atmospheric pressure was most above the mean, and that towards the end of the series it was most below; that it was at, above, or near the mean between the years 1866 and 1882, and below in every year from 1883.

THE HOME OF SAMUEL.

By Prof. Lucien Gautier, Ph.D.

Dr. Schick's papers are always extremely instructive ; nobody appreciates them more than I do. His long experience of the Holy Land and his technical knowledge give a special value to all his writings. His notice in the January number of the *Quarterly Statement* on "Ramathaim-Zophim" contains the most useful materials. Thankful for these precious informations, I suppose I may, nevertheless, discuss freely the exegetical basis upon which Dr. Schick builds his theory about the home of Samuel and its identification with the localities he has so thoroughly studied and described.

Elkanah, says Dr. Schick, was "the son of Zuph, an Ephratite, *i.e.*, a Bethlehemite." Now, certainly, such is the sense of the word Ephratite in Ruth i, 2, and in 1 Sam. xvii, 12 ; but in Judges xii, 5, and in 1 Kings xi, 26, it is quite as evident that Ephratite = Ephraimite. The word has two meanings, both historically proved ; therefore it is natural to take it in 1 Sam. i, 1, in the sense which the context imperiously suggests, namely, = Ephraimite, as Elkanah is called "a man from Mount Ephraim." It follows that the home of Samuel was north and not south of Jerusalem.

But Rachel's tomb ? Dr. Schick says that, having formerly advocated in the *Quarterly Statement* the idea that there were two monuments of Rachel, he has given it up, and believes now that Rachel's tomb has always been where it is shown now, near Bethlehem. According to that theory, which involves the rather unnatural supposition of a strip of land allotted to Benjamin within the land of Judah, Saul, returning from Samuel's home to his own village and passing near Rachel's tomb, must have started from some locality south of Bethlehem. Jeremiah, however, speaking (xxxi, 15) of the inhabitants of Jerusalem assembled at Ramah (xl, 1) and going to be brought northward to the land of the Exile, mentions, in connection with Ramah, "Rachel weeping for her children." This fact, combined with the most natural explanation of 1 Sam. ix and x, shows that in Jeremiah's time Rachel's sepulchre was still shown north of Jerusalem. Later on, and already in the time of the Evangelist St. Matthew (ii, 17–18), it was transferred south of the metropolis to the place where it is still to-day.

Dr. Schick says : "It might be that of the Ramahs so often mentioned one or more may in some passages mean quite another city, but a close study makes it probable that one and the same, viz., Samuel's home, is always meant." Of course, he does not include the different Ramahs mentioned here and there, two in Galilee (Joshua xix, 29, 36), one or two in Gilead (Joshua xiii, 26 ; 2 Kings viii, 29 ; 2 Chron. xxii, 6), one

in the Negeb (Joshua xix, 8); but I do not understand, if he puts Rama the home of Samuel near Bethlehem, how his assertion can be maintained in view of such texts as Judges xix, 13; 1 Kings xv, 16–22. The Ramah mentioned in these two texts is generally identified with er-Râm, and it is usually acknowledged that the same place is also mentioned by Joshua xviii, 25; 2 Chron. xvi, 1; Ezra ii, 26; Neh. vii, 30; xi, 33; Is. x. 29; Hos. v, 8. But is it possible to identify this Ramah, which we may call Ramah of Benjamin, with the Ramah of Samuel? Several of the first authorities deny it: Robinson, Furrer, Schürer, G. A. Smith, Buhl, Conder, and Séjourné. However, the great majority of the texts are not incompatible with this assimilation: 1 Sam. i, 19; ii, 11; vii, 17: viii, 4; xv, 34; xvi, 13; xix, 18–23; xx, 1; xxv, 1; xxviii, 3. And if the "nameless city" of 1 Sam. ix–x is the same Ramah it might also quite well be situated at er-Râm.

But there are two serious objections.

(1) Elkanah's home belongs (1 Sam. i, 1) to Mount Ephraim, and Elkanah is called an Ephratite = Ephraimite. Is that not a sufficient proof that we must look for another Ramah, er-Râm belonging to the territory of Benjamin?

I answer that we do not know exactly what extent was given to Mount Ephraim. The Benjamite Ehud (Judges iii, 12–30), after the murder of Eglon, king of Moab, goes and blows a trumpet in Mount Ephraim (v. 27). Deborah (Judges iv, 5) "dwelt . . . . between Ramah and Bethel in Mount Ephraim." The Benjamite Sheba, son of Bichri (2 Sam. xx, 1), is called (v. 21) "a man of Mount Ephraim." Zemaraim (Joshua xviii, 22) belongs to Benjamin; but Mount Zemaraim (2 Chron. xiii, 4) belongs to Mount Ephraim. Er-Râm was in the northern kingdom (1 Kings xv, 16–22), and the terms Mount Ephraim and Ephraimite could have been extended to some localities on Benjamite soil.

(2) In the same verse (1 Sam. i, 1), Elkanah's home is called in the massorethic text, "Ramathaim-Zophim" instead of Ramah. Notwithstanding the opinion of Gesenius, and some others among the old writers, it is now generally accepted that this place is the same as Ramah of Samuel. The *hapax legomenon* Ramathaim-Zophim is explained either (*a*) as a second name of Ramah, the hill (Ramah, singular) having two summits (Ramathaim, dual); or (*b*) as a clerical error; or (*c*) as an intentional correction; or (*d*), according to Dr. Klostermann, by the clever supposition that only the vowels must be changed and that we ought to read *min-haramathim*, one of the Ramathians, *i.e.*, of the inhabitants of Ramah, that *gentilitium* being used in 1 Chron. xxvii, 27. Be it as it may be, all this does not modify our former conclusions, but the Septuagint usually transcribe Ramah by the dual form; the First Book of Maccabees (xi, 34) mentions a village called Ramathem; the New Testament has a town called Arimathea; and Eusebius and Jerome say that this place, Ramathem-Arimathea, being Samuel's home, was near Lydda and in the territory of Timnah. If this can be proved, we shall have to admit two Ramahs, but if it is not proved, we may

still maintain the unity of the two Ramahs. If there had been two different places of that name, both near Jerusalem, both north of it, both important, both frequently mentioned, how could it happen that nothing ever hints at this fact, and that in the usual language both are always mentioned by the same name, a quite common name, a name which is scarcely a proper noun?

I may add that a superficial reader of Dr. Buhl's very able book, "Geographie des Alten Palaestina" (pp. 170-172), might be easily mislead and brought to believe that Ramah of Samuel is always written without the Hebrew article, whereas the "other" Ramah, Ramah of Benjamin = er-Râm, is *ha-Ramah* with the article. This would be quite false; both names have systematically and equally the article.

Geneva, Switzerland.

HEBREW NAMES IN INSCRIPTIONS FROM BABYLONIA.

By Theophilus G. Pinches, M.R.A.S.

It is with great pleasure that I have read the note of Prof. H. V. Hilprecht in the January *Quarterly Statement*, pp. 54–55. To the American expedition to Niffer we are greatly indebted for a large number of discoveries of the greatest importance, which, under Prof. Hilprecht's able editorship, are now being given to the world.

I have long felt that there must be something in the Hebrew tradition that Niffer is the site of the ancient city of Calneh, and the presence of the Hebrew names of which Prof. Hilprecht speaks seem to give great probability to the statements of those ancient writers, who certainly were in a position—living, as they did, so much nearer the time when the city was in existence as an active and integral part of the Babylonian empire—to know better than we whereabouts the site of that ancient foundation of Nimrod lay.

With regard to the names of which he speaks, it is to be noted that they are of great value as such. Thus we have, among others, the Babylonian forms of Adoram, Haggai, Elzabad, Nathaniel, &c. Most interesting of all, however, are those ending in *āma*—Gadalyāma, Hananyāma, Igdalyāma, and Mattanyāma, which are, apparently, to be read with the final syllable transcribed as *wa*—Gadaliāwa, Hananiāwa, &c., showing the original Hebrew forms of these names (Gedaliah, Hananiah, Igdaliah, and Mattaniah), here compounded with the unpronounceable name Yāwa (Yahwah or Jahwah), later pronounced as *-iah* or *-iahu* only, and changed to Adonai when it occurred in the course of the Bible narrative as the name of God. Yahwah is, in fact, the true pronunciation of the divine name transcribed in our Bibles as Jehovah.

It is noteworthy, however, that names of the same form occur on many other documents, most, if not all, from the well-known city of Sippara. To the four names ending in *-iawa*, quoted by Hilprecht, we may add, therefore, ten others, namely, Abi'-yāwa, Aqabi-yāwa, or Akabiah, Azzi-yāẖwa, Banāwa or Beniah, Gamar-yāwa or Gemariah, Ḫul-yāwa, Malaki-yāwa or Malachiah, Natanu-yāwa or Nethaniah, Šubunu-yāwa or Shebaniah, and Yase'-yāwa or Isaiah.

That this ending *-yāma* is the long-lost pronunciation of the name read Jehovah, and not the Babylonian form of the divine name Jah, is proved by such names as Bel-Yau or Bealiah, Abi-Aa or Abijah, Aḫi-ya or Ahiah, and by some few non-Biblical names—Yaḫabi, Yâ-abîni, Nabû-yā', Yâ-Dagunu, with several others combined both with Yâ and with Aa. We may, therefore, expect a rich harvest of interesting names both from the tablets now known and from numberless others yet to be discovered.

Those who care for this branch of Oriental study will find further information in my paper, entitled "The Religious Ideas of the Babylonians," in the *Journal of the Transactions of the Victoria Institute* for 1894–95.

THE
PALESTINE EXPLORATION FUND.

NOTES AND NEWS.

On April 7th Mr. James Glaisher, F.R.S., who for so many years has been the Chairman of the Executive Committee, entered the ninetieth year of his age, and his colleagues seized the occasion to present him with the following address of congratulation, signed by all the members of the General Committee whose present address could be found. Sir Charles W. Wilson, R.E., took the chair, and there were also present the Rev. Canon Dalton, the Rev. Dr. Ginsburg, the Rev. Dr. Wright, Sir Walter Besant, Sir George Grove, Mr. J. D. Crace, and Dr. Chaplin:—

"Dear Mr. Glaisher,—We, the members of the General Committee of the Palestine Exploration Fund, desire to offer you our most sincere congratulations and best wishes on this day, the 7th of April, when you are entering upon your ninetieth year. Born in the same remarkable year that gave to the world Gladstone, Tennyson, and so many other illustrious men, you have yourself witnessed nearly all the important events of this century, with all the wonderful changes that have passed over the world, the unparalleled discoveries of science, and the expansion of the Anglo-Saxon races from a population of twenty millions to nearly one hundred and twenty millions. You have yourself advanced science in two directions at least—in knowledge of the atmosphere round the earth and in the science of meteorology. Your services in science have been recognised by that Fellowship of the Royal Society which is desired by every scientific man. We desire to convey to you our recognition and appreciation of those labours, conducted with resolution and success during the long period

covered by your years of life. It is now more than thirty years since you joined the Executive Committee of this Society. The Palestine Exploration Fund was then commencing its work on lines wisely drawn up by the original projectors—lines which allowed of expansion, yet indicated the nature of the direction which the work should take. As a member of the Executive Committee you have assisted in the conduct of the successive expeditions sent out to the Holy Land—that of Sir Charles Wilson, that of Sir Charles Warren, that of Professor Palmer, those of Colonel Conder, that of Sir Herbert Kitchener, that of M. Clermont-Ganneau, that of Professor Hull, those of Professor Flinders Petrie and Dr. Bliss, besides the smaller journeys of special research conducted by other travellers. By means of these expeditions a flood of light has been poured upon the interpretations of the Bible; the country has been surveyed; its fertility and the former denseness of its populations have been proved; the true glory and splendour of the Temple buildings and of Jerusalem have been now brought to light. The Land and the People can be understood at the present day as had never before been possible. One department of the work has been from the outset under your charge—that of the climate and the meteorology. Your papers from time to time published in our journal on this subject prove the care and trouble which you have bestowed upon it. It is now eighteen years since you assumed the office and the responsibilities of chairman of the Executive Committee. Only those who have worked with you know the unremitting care with which you have watched and conducted the surveys and the excavations abroad, the publication of the reports at home, and, which is a matter of considerable care and anxiety, the management of the finances of the Society. In offering you this grateful recognition of your part in a work which we have every reason to regard as a contribution to the right understanding of the Bible, only second to its translation into the vernacular, we venture to express our earnest hope that you may continue in the post you now occupy for many years to come, and that the time is still distant when you will find it necessary to resign your chair as the head of the Executive Committee."

RENEWAL OF PERMISSION TO EXCAVATE.

A letter dated June 11th has been received from John Dickson, Esq., H.B.M. Consul at Jerusalem, stating that he has received a despatch from Her Majesty's Ambassador at Constantinople, requesting him to inform the Committee of the Palestine Exploration Fund that the Iradé sanctioning the excavations which they propose to carry out has been duly communicated through the Ministry of Public Instruction to Hamdi Bey.

Arrangements will, as speedily as possible, be made for recommencing these important researches, and it is hoped that all interested in the Exploration of Palestine will join in supplying the Committee with the needful funds in order that the work may be carried on quickly and efficiently.

Dr. Schick sends the following notes and news :—

This year very many Russian pilgrims came to Jerusalem, which had not been the case for some years. It is a sign of a peaceful state of political affairs. At the Russian settlement outside the city, a large new wooden barrack with tiled roof was erected to accommodate the pilgrims, as the existing buildings were not large enough for the purpose.

The Christian feasts and Moslem pilgrimage to Neby Mûsa have happily passed without disturbance.

The Rev. A. H. Kelk, Minister of Christ Church and Head of the London Mission to the Jews, has had a set of tubular bells put up on Christ Church, which hitherto had only one small bell, not on the church itself but on one of the neighbouring buildings. This bell was put up in the year 1854, when the Moslems were not prepared to hear bells, and, with a little one on the Church of the Holy Sepulchre, was the very first bell in Jerusalem. It has, however, been followed by many, some of them large. Last Christmas a set of three bells was also put up on the tower of the new German Church of the Redeemer, and I heard their voice first on Easter Day. People are being taught to ring them, so that when the Emperor comes they may be able to do it well. I have been requested by the Germans here to write an essay on the genuineness of the Church of the Holy Sepulchre, or the true site of Golgotha, to be presented to the Emperor when he comes to the dedication of the Church. I have, by the help of God, tried to do so, and have related everything which has come to my knowledge during the last 50 years; what can be said against and what for it. But, after all, I have the full conviction that the site is genuine.

A German professor from Heidelberg was recently here and called upon me with reference to an inscription found in the Khankey by M. Clermont-Ganneau, which I did not remember, but found afterwards mentioned in the

Jerusalem Volume, p. 427, and the *Quarterly Statement*, 1871, p. 103. The professor said this stone had been on the pagan altar of the tenth legion, and hence their sanctuary was at Calvary, or the place of the present Church of the Holy Sepulchre. If he is right, we have in this another proof of the genuineness of the said place, as, according to Eusebius and Hieronymus, Constantine built his church where formerly a Temple of Venus stood, which was on Calvary and the Holy Tomb.

One thing has often struck me, namely, people saying that the Christians of the time of Constantine were ignorant, superstitious, and so on. Major Conder even says (*Quarterly Statement*, 1883, p. 73) they hardly knew the difference between Christ and Serapis. People who were persecuted for their faith in Christ, and gave their lives as martyrs for Christ, certainly knew the difference between their risen and living Lord and pagan idols. Certainly also they knew the Scriptures, and were acquainted with the configuration of the ground in and about Jerusalem much better than we. They lived only 300 years after the crucifixion, we 1,800 years. Common sense suggests the question, "Can we know it better than those of old?"

We have received from its author, P. Girolamo Golubowich, a copy of "Serie Cronologica dei Reverendissimi Superiori di Terra Santa," printed at the Convent of St. Salvatore, Jerusalem, 1898. It contains much interesting information bearing upon the history and present condition of the Franciscan establishments in the Holy Land, a list of the Presidents and Custodians from the year 1219, copies and translations of Firmans granted to the Order in the fourteenth and fifteenth centuries, list of the various establishments now existing, &c.

Through the courtesy of Dr. J. H. Gladstone, F.R.S., we have received a copy of his lecture, delivered at the Royal Institution, on "The Metals used by the Great Nations of Antiquity," and published in "Nature." We hope to reprint in our next issue that portion of the lecture which refers to Palestine.

The office of the Fund is now established in the new premises at 38 Conduit Street (a few doors from Bond Street), where the Museum is open to visitors every week-day from 10 o'clock till 5, except Saturdays, when it is closed at 2 p.m.

Dr. Bliss's detailed account of his three years' work at Jerusalem is now in the press, and will be published shortly as a separate volume, with the title "Excavations at Jerusalem, 1894–1897." The book will be copiously illustrated by maps and plates.

The income of the Society, from March 28th to June 23rd, 1898, was—from Annual Subscriptions and Donations, including Local Societies, £182 18*s.* 10*d.*; from Lectures, *nil*; from sales of publications, &c., £147 15*s.* 1*d.*; total, £330 13*s.* 11*d.* The expenditure during the same period was £511 5*s.* 11*d.* On June 23rd the balance in the Bank was £819 3*s.* 2*d.*

Memo. for Subscribers to the Survey of Palestine.—In the original programme it was intended that the "Archæological Researches" of M. Clermont-Ganneau should be published in one volume, but the work increased so much since its commencement that the Committee found it necessary to arrange for the publication of the whole in two volumes. Vol. II has been published in advance for the reasons stated in the prefatory note.

Vol. I, which treats of Jerusalem and its neighbourhood, is now well forward, and, when ready, will be sent out to the first 250 Subscribers without any increase in their subscriptions for the full set.

The set consists of "The Survey of Eastern Palestine," by Lieut.-Colonel Conder, LL.D., R.E., in one vol.; "The Fauna and Flora of Sinai, Petra, and the Wâdy 'Arabah," by H. Chichester Hart, B.A., in one vol.; "The Archæological Researches," by Professor Clermont-Ganneau, in two vols. Four volumes in all.

There are only a few copies of the sets left at the price of **£7 7*s*.**

The price of a complete set of the translations published by the Palestine Pilgrims' Text Society, in 13 volumes, with general index, bound in cloth, is £10 10*s*. A catalogue describing the contents of each volume can be had on application to the Secretary, 38, Conduit Street.

It may be well to mention that plans and photographs alluded to in the reports from Jerusalem and elsewhere cannot all be published, but all are preserved in the office of the Fund, where they may be seen by subscribers.

Branch Associations of the Bible Society, all Sunday Schools within the Sunday School Institute, the Sunday School Union, and the Wesleyan Sunday School Institute, will please observe that by a special Resolution of the Committee they will henceforth be treated as subscribers and be allowed to purchase the books and maps (by application only to the Secretary) at reduced price.

The Committee have to acknowledge with thanks the following donations to the Library of the Fund :—

"The Hittites and their Language." By Lieut.-Colonel C. R. Conder, R.E. From the Publishers, Wm. Blackwood and Sons.

"Serie Cronologica dei Reverendissimi Superiori di Terra Santa." By P. Girolamo Golubowich, Jerusalem, 1898. From the Author.

"La Carte Mosaïque de Madaba." Presented by Canon Dalton, C.M.G.

The Committee will be glad to receive donations of Books to the Library of the Fund, which already contains many works of great value relating to Palestine and other Bible Lands. A catalogue of Books in the Library will be found in the July *Quarterly Statement*, 1893.

While desiring to give publicity to proposed identifications and other theories advanced by officers of the Fund and contributors to the pages of the *Quarterly Statement*, the Committee wish it to be distinctly understood that by publishing them in the *Quarterly Statement* they neither sanction nor adopt them.

In order to make up complete sets of the *Quarterly Statement* the Committee will be very glad to receive any of the back numbers.

Subscribers who do not receive the *Quarterly Statement* regularly are asked to send a note to the Acting Secretary. Great care is taken to forward each number to those who are entitled to receive it, but changes of address and other causes occasionally give rise to omissions.

The Committee of the Palestine Exploration Fund desire to make clear that they have no book on their List of Publications called "Picturesque Palestine," nor is any person authorised to represent this book as published by the Society; nor has the Society any book-hawkers in its employment.

Tourists are cordially invited to visit the Loan Collection of "Antiques" in the Jerusalem Association Room of the Palestine Exploration Fund, opposite the Tower of David, Jerusalem. Hours: 8 to 12, and 2 to 6. Maps of Palestine and Palestine Exploration Fund publications are kept for sale.

Photographs of Dr. Schick's models (1) of the Temple of Solomon, (2) of the Herodian Temple, (3) of the Haram Area during the Christian occupation of Jerusalem, and (4) of the Haram Area as it is at present, have been received at the office of the Fund. Sets of these photographs, with an explanation by Dr. Schick, can be purchased by applying to the Secretary, 38, Conduit Street, W.

Application for Lectures should be addressed to the Secretary, 38, Conduit Street, W.

PLAN OF THE CHURCH OF THE HOLY SEPULCHRE &C.

SHEWING POSITION OF SECTIONS.

PALESTINE EXPLORATION FUND.

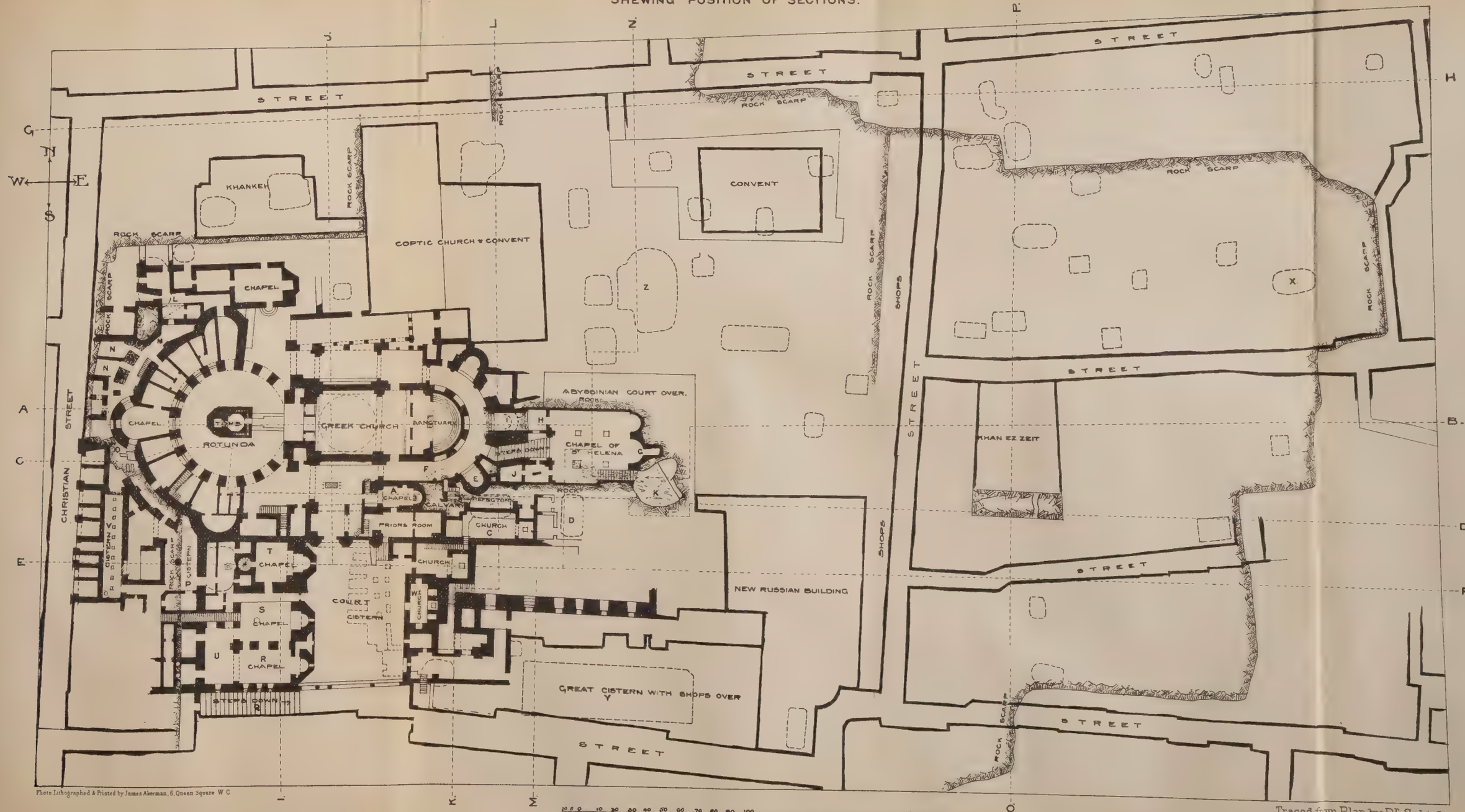


Photo Lithographed & Printed by James Akerman, 6 Queen Square W C

Traced from Plan by Dr Schick

THE SITE OF THE CHURCH OF THE HOLY SEPULCHRE AT JERUSALEM.

By Dr. Conrad Schick.

I.

The genuineness of this church is by many writers disputed, whereas others advocate it. Into this question I will not enter in this paper, but simply give several statements on the configuration of the ground, describing rock scarps, cisterns, &c., which may bear on the matter. I have recently made careful researches,[1] in order to be enabled to furnish plans in plaster of the ground, and in the course of these researches I found several important things, to report which is now my duty.

1. One of the chief points was to ascertain whether the Calvary rock is really rock or some imitation. I always felt uncertain on this point, and when asked about it by the Secretary of the English Palestine Exploration Fund, I could only give a doubtful answer, so I made this the first thing in my researches. It is well known that in the "Chapel of Adam," A, in a closed recess, and over it, on Calvary, *rock can be seen*. I paid a visit to the Greek Archimandrite, telling him about my doubts, and asking to be permitted to see the walls of his inner room, which is always locked. It was opened to me, and I was astonished to find there a very fine and costly museum of a great variety of things, but, alas! the walls were plastered so that I could see no rock, nor could the Archimandrite tell me what was behind the plaster, as he had not paid attention to this point before the plastering was done some years ago. Also, owing to the plaster, I could not see the blocked-up door which once led on this side to Calvary, besides the one through the Roman Catholic chapel on the top of the stairs. So I went up to Calvary and to the refectory of the Greeks, in order to examine the east side. The wall upstairs, between the place of the Cross and the refectory, is very thin, and as there are cupboards there, made partly of wood and also plastered inside, I could see no rock. Coming down from the refectory half way there is a short passage a little more than 6 feet high, covered with some long stones, hewed square like lintels, between which are also one or two pillar shafts which form part of the flooring of the refectory and the passage between the Greek Choir and Calvary.

This flooring of Calvary and of the refectory is 14 feet higher than the general flooring of the church. If one goes from the latter up to the refectory by a number of steep semicircular steps, passing the low and comparatively narrow and short passage already mentioned, he may see at its end a locked door, but as the stair here makes a turn towards the east,

[1] I made such in 1863, when I had to make a model of the church, then later at various times, as in 1884, and again in 1895 and 1896.

all passengers leave the door untouched and go up to the refectory. This door was now opened for me, and I found at B a continuation of the passage for about 5 feet, and at the bottom of it a sink like a pool and water in it. A wooden board lying on the brim enabled me to walk in, and I found to my left hand the rock and a large fissure in it going eastwards for 12 feet (*see* Section CD). It is about 3 feet high, and about 18 inches wide on the top, but at the bottom only 8 inches. It ends at a little door like the mouth of a cistern hewn in the rock, and not masonry, which I could plainly see by its covering being of rock. The depth of the cistern from the bottom of the fissure is 13 feet 3 inches ; it had nearly 10 feet of water in it. The extent of the cistern I could not make out, nor could the people tell me, as they had never been in ; the water is drawn up in the refectory itself. It is clear that it extends also southwards, at least partly, under the passage and church of the Abyssinians, C. There is another cistern east of this one, in the court of the Abyssinians, in the same line and level, and also cut into the rock : so that the rock from Calvary goes, in the same height and line, eastwards, and, as it seems, as far as to the Russian property, where it is found very nearly at the same level, so one may conclude that the rock goes through this whole length as a long rock bench. This was proved also by what I found in St. Helena's Chapel. The fissure is at its top covered with flat stones, on which the paving stones of the Refectory are resting. Würzburg and other pilgrims mention the fissure without giving the dimensions ; but Tucker says "it was so large that a man may lie down into it" ; and George says "that a man may sleep in it" ; others say "large," &c. These pilgrims meant apparently this fissure, whereas Tshudi, in saying that a man may put his hand into it, means the one in Adam's Chapel, A. With regard to the colour of the rock the pilgrims differ, which is quite natural, as I observed also that it is in the fissure white, not like chalk, but rather a darker colour, so one may say grey, and another one sprinkled, as it is not a hard rock, but a kind of conglomerate in Adam's Chapel, but in the chapel of St. Helena the rock is harder and a little reddish.

Tobler takes the variety in size and colour as an argument that the rock is a forgery ("Golgotha," St. Gallen, 1851, p. 286, &c.), but without proper reason. Although the steps leading up to it (*see* Section KL) and the flooring of the passage (not of the fissure) are artificial, the rock is certainly under them, and was once visible, and the steps cut into the rock, as Maundeville states.[1] Originally the place with the hole in which the cross had stood was free round about, so that pilgrims could walk round it,[2] which was altered when the thin wall was put in and the refectory made. The chapel of the Crown of Thorns, C, is in its lower part most likely cut into the rock, but as it is plastered I could not see it. On the main flooring

[1] The steps trodden away by the feet of so many visitors were replaced by stones.

[2] At that time there was no refectory, and the arches of the present building over Calvary were open.

of the large church, between the Greek Choir or Sanctuary and Calvary, F, the rock is visible, and artificially shaped to look like the flagstones of the neighbouring pavement. And here the surface of the main flooring is a little higher than the whole—slanting slightly towards east and west from it.

2. The second thing I had to do was to examine the rock in St. Helena's Chapel, as I had stated in one of my reports that the northern and southern walls are masonry, and others had contradicted me, stating that they were rock and not masonry. The decision of the question was not so easy, as these walls are plastered, and the sound of beating on them not so certain. This time I had some fortune. At several places on the north and south walls some pieces of plaster had fallen down, and there it could be very distinctly seen that the wall was of masonry. Having obtained permission from the Armenian Convent for a minute and careful examination, and the guardian in the church having received orders to that effect, doors were opened for me wherever I wished. In St. Helena's Chapel, behind the larger altar in the eastern wall of the middle apse, is a recess, G, forming a cupboard, not plastered inside, so I could see that the wall was masonry, and that the recess was not originally built in, but afterwards broken in, as there were no stones with hewn faces, but shapeless stones or rubble. Yet the rock cannot be far behind, as south of it the rock is overhanging the stair (*see* Section AB) and partly even the chapel. Then the rooms on the western side of the chapel were opened. In both, the eastern part is made in two stories, one above the other. In the northern, H, I could see, in the lower story, the rock up to its cover on north and west side, and going in 15 feet (towards west), but the upper story goes much more west, to under the altar of the Chapel of the "Parting of the Garments," I—or a total of 35 feet, and here all three sides are rock, and also parts of the cover—so that in the round passage of the church the two basements of the pillars standing to the right and left of the "Parting of the Garments" Chapel consist of *living rock*, as well as the *first step* leading up to the flooring of the said chapel. The southern rooms, J, are somewhat different. The lower one goes in for 25 feet, its western part is much narrower than the eastern, and in a slanting direction, like the staircase north of it. The southern wall proved to be rock as well as its west end. The eastern part has in it an oblong-shaped support or pier of masonry for bearing the cover over it, and the room had formerly a wide opening northwards towards the stairs. The room of the upper story, only going $7\frac{1}{2}$ feet further in than the lower—or, in total, $32\frac{1}{2}$ feet westwards—ends in a rock wall. Along its southern wall runs a walled stone bench, but behind it there is the rock. My guide (the Armenian priest) said it was of very large *stones*, but at a place where the plastering was quite loose, and partly already fallen off, on removing more of it we could clearly see that it was rock, cut down in a very straight line from west to east, and at the northern wall of St. Helena's Chapel we found quite the same, viz., that the northern and southern walls of the Chapel of St. Helena consist of rock, in straight lines, but

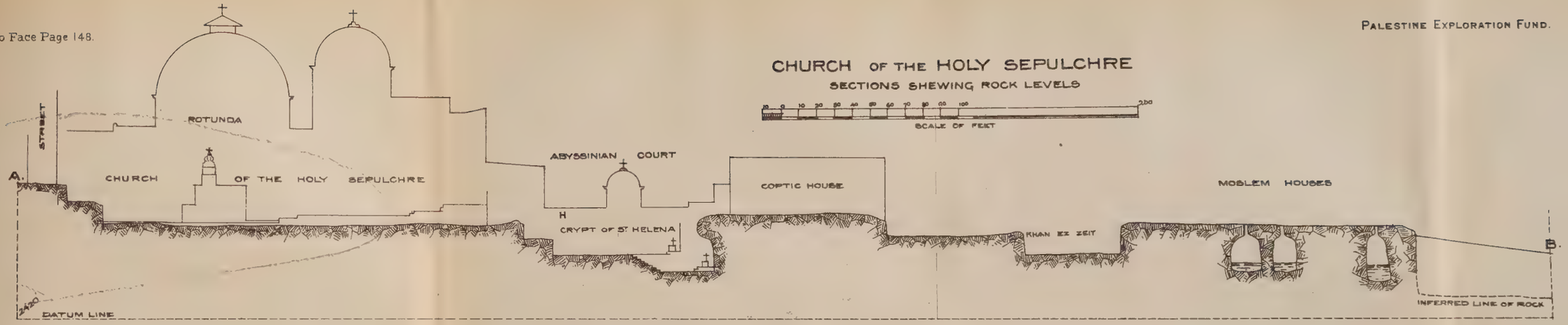
with a retaining wall along it, not so high as the rock, but so high that the spring of the arches could stand on them. This would indicate that the original coverings or archings of the chapel were a good deal higher than now, and the chapel at that time 2½ feet wider; and that this lining wall was built when the present existing archings were made. The question is therefore with the following sentence decided: The northern and southern walls of the Chapel of St. Helena are *masonry of moderate thickness, but behind them are rock walls.* I found, further, that the basement of the south-western pillar of this chapel is living rock; hence much wider and larger than the three others, as any correct plan will show; and further, that south and south-eastwards from this pillar the flooring is rock, and also the steps leading down to the "Chapel of the Invention of the Cross," K; but some steps are restored with stones. The old pilgrims speak of the depth of the "fissure" going down to St. Helena's Chapel. Of this I found nothing, but it may be behind the side or retaining walls. The Armenian priest said that formerly a very large church stood here. Arculf, about A.D. 670, mentions that east of the four-sided church built on the site of Calvary was the stone basilica constructed by Constantine, and also called the Martyrium, built, as is said, on the spot where the Cross of our Lord and the other two crosses were found, and that "between these two churches lies that illustrious place where the Patriarch Abraham built an altar . . . . where is now a wooden table of considerable size" (Pal. Pilg. Text Soc. Trans., p. 10). This might have been at the western part of the present upper story on the south of the stairs going down into the present Chapel of St. Helena.

3. A third point for examination was the outside of the rotunda wall. Arculf[1] speaks of the rotunda as follows:—"This very great church (of the Holy Sepulchre), the whole of which is of stone, was formed of marvellous roundness in every part, rising up from the foundations in three walls, which have one roof at a lofty elevation, having a broad pathway between each wall and the next; there are also three altars in three dexterously formed places of the middle wall. This round and very large church, with the abovementioned altars looking one to the south, another to the north, a third towards the west, is supported by twelve stone columns of marvellous size. It has twice four gates, that is four entrances, through three firmly built walls . . . . of which four means of exit look to the north-east . . . . whilst the other four look to the south-east." As the present church has only two walls, viz., the circles of the square piers, on the places of the former large pillars, and the outer (embracing) round wall, some writers doubt the fact of three walls, and translate the sentence not three *walls* but three *stories* or galleries, one above the other, as is still the case. But as Arculf's description is illustrated by Adamnan's plan, which shows really three

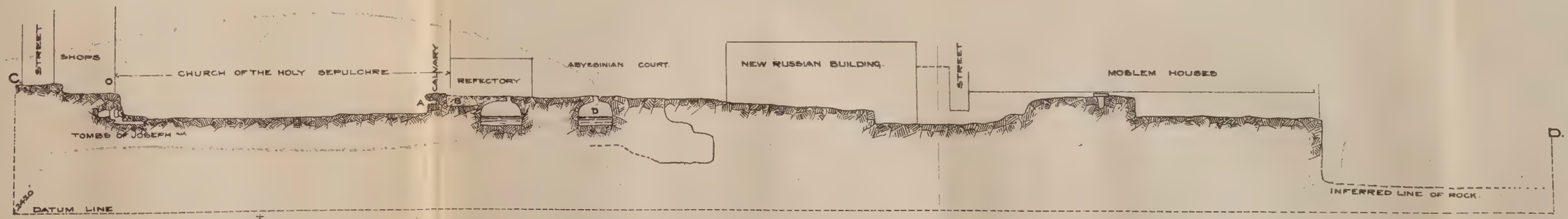
[1] "The Pilgrimage of Arculfus," Palestine Pilgrims' Text Society, London, 1889, pp. 5 and 6.

CHURCH OF THE HOLY SEPULCHRE

SECTIONS SHEWING ROCK LEVELS



SECTION ON LINE A.B.



SECTION ON LINE C.D.

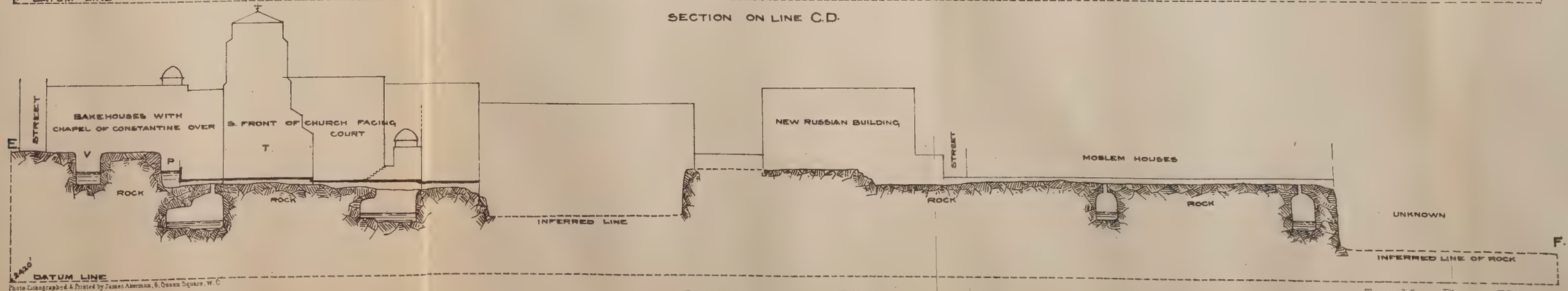


Photo-Lithographed & Printed by James Akerman, 6, Queen Square, W.C.

SECTION ON LINE E.F.

Traced from Plans by Dr. Schick.

walls, I doubted this interpretation, and wished to find, if possible, traces of a third wall—like the Ascension Church on Mount Olivet, which also had three walls, as explained in my paper on this church (*Quarterly Statement*, 1896, p. 310). The Greek Archimandrite allowed me to examine the magazines in the north-west, outside the embracing wall of the rotunda, and sent a priest with a servant with me, to open whatever I wished. Going along the passage which leads to the small open court, L, we turned southwards into a kind of arched hall, on through a doorway into a dark and rather narrow passage at M, to the west of which were two rooms, NN, both full of jars and oil. Immediately beyond these rooms is an isolated pier, and to the west of it are another two rooms smaller than the before mentioned, but much higher, one having in its top a well hole blocked up by a stone. The passage terminates through an opening into a chamber which is closed up on the south side by the rock, O, in which are cut the tombs of Joseph and Nicodemus. On the east of this compartment I could plainly see the curved wall of the western chapel with a window blocked up. In examining the western walls of the dark rooms I found them of rock to a great height, even the pier with the arch on it seems to be rock, and in going back I found it so with the other rooms before mentioned. When at home and putting down on paper what I had seen, I was not able to introduce it in the plan of the church, so I had to go once more *measuring the details and heights*, when I found that the two first northern rooms in the passage, NN, are of two stories (two rooms below and two above), and, to my astonishment, the upper ones rather narrower than those below. Also I found that all had been once a *cave in the rock*, but its roof being somewhat weak, when some buildings (the Patriarch's residence in the Crusading time) were erected on it, they had, by masonry, to strengthen it, putting walls and a pier in the middle, and on closer examination I found that even the side walls towards the passage were also of rock, and the doors cut through, two above and two below, but not exactly one above the other ; also that the passage itself had been divided by wood into two stories, a stone stair leading up along the rotunda wall. The rock is of rather a brittle and decaying nature, so sometimes repairs by masonry were necessary. By the later buildings the passage lost in some degree its proper circular line by corners of piers, arches, &c., but when put on a plan the original circular line is clear, and was originally unroofed. The space between this outer circular wall and the present rotunda wall is 6½ feet wide. The rotunda wall is pierced by doors at several points, and is nearly 4 feet thick, having also piers on the inside, leaning to the piers a passage (now interrupted by cross walls) between this circular wall and the piers (or the former pillars) is about twice as much, or 11 feet, and with the piers 23 feet. The surface of the floor outside the rotunda wall is, in its southern part, or behind the western apse and its neighbourhood, 12½ feet above the main surface of the floor of the rotunda (*see* Section CD), and here the rooms are only of one story, but at the

northern part, where there are two stories, the surface of the passage and of the lower rooms is only 7 feet 3 inches[1]—hence the stair I mentioned was necessary, and was built when the rotunda wall was built. But the latter shows parts of restoration. For instance, there is a long piece near the northern apse, comparatively new and of a different kind of stone from the rest. Arculf's plan (by Tobler, "Golgotha," p. 107, and others) shows in the circle behind each of the three apses a square recess, and just so I found it behind the western apse.[2] The window I observed on the outside of the western apse is about 14 feet 6 inches above the level of the rotunda floor, and the present roof of the apse is only 12 feet high and breaks into the daylight of the window.[3] The southern apse is the same, but the northern one, in its remaining part, is 26 feet 6 inches above the level of the rotunda floor. From this it seems clear that an intermediate roofing had been put into the southern and western apses, thus converting them into two stories.

With regard to the *third* wall, I found on the south-western side of the rotunda things in some degree similar to those on the north-west, just described. But as the convent is here, there has been much more alteration, though I could detect the circle in the highest story of the Church of Constantine, where the curious piers and pillars there find their explanation in the outer circled wall; also in the story below, where there is the baking oven and the necessary apartments belonging to it, I found a recess 6½ feet wide between the walls, and further north of it, at the Copts, a similar place, the continuation of the passage. The three (or four) rooms there go also so far in from the inner and lower gallery of the rotunda, to the outer or *third* circled wall; the strange turning of the inside of the rooms represents the line of the circled outer or third wall. Then there is, south of the Coptic rooms, a rather interesting cistern of the Greeks, of which I will speak hereafter.

4. Having done all this, there were still some things left for examination, especially that part which belongs to the Roman Catholics. I found the dark magazines west behind the large cistern in Sir Charles Wilson's plan correct, only they are situated a little nearer to Christian Street, and stand parallel with it. Here the rock rises up (visible) to the springing of the vaultings on the west and north sides, and very likely still higher behind the archings. The north side in the Roman Catholic convent itself I found the rock not only in a few places on the flooring, but in the north wall as a *scarp* in a straight line and to a considerable height, in some places 20 feet, from the surface of the flooring of the passage, going along it, or 25 feet from the general church floor. The stair there is leaning against the scarp.

West of the rotunda the rock is 14 feet high, in which are cut the tombs of Joseph and Nicodemus, O; some rooms of the Copts rest on the rock.

[1] Or about 24 feet lower than the surface of Christian Street, on the west.

[2] The southern was in later time made into a cistern.

[3] So the window cannot be seen inside.

South of the rotunda, I have not actually *seen* a scarp, but there must be one, in a straight line from the surface of the shops in the south, where the road is bending, going northwards as far as the outer wall of the rotunda (*see* Plan and Section EF), as there are, east of this line, and in the full length chambers of two stories, one above the other, whereas west of this line are none, but all solid, so there was once here a comparatively level terrace from the edge of the scarp westwards to the present street, or still further, about 60 feet wide and 100 feet long. As there is now a kind of passage, P, behind the (eastern) rooms 8 feet wide, having on its western wall some old pillars standing *in situ*, showing that once a row of pillars stood here along the whole passage, put a little backwards or west from the edge of the scarp, on which certainly a parapet wall stood, people could walk here and see from this elevated gallery down to the then much larger court of the church (*see* sections), and what was going on there. The three churches of the present day and the belfry tower were not built at that time, so the court was much larger. In the south, the broad stairs, Q, came up from the court to this gallery and elevated terrace without any bendings.

In the Gethsemane Convent, south of the churchyard, the rock is found on a level with the floor of the yard (*see* Section IJ), and so there is some possibility that originally the court also may have been longer towards the south. Under the eastern part of this court is a cistern, now used as a cesspool, as the sewers are entering it. The west side of it, with the niches, are rock, and it has (most likely) on the east also, but some of the piers, standing free, are of masonry. The deepening in the rock might have gone further east, but I could not ascertain this. For fuller explanation as regards the rock in general I refer to the special paper (No. 5) and the plans Nos. 3 and 4, but have here to report a few points more.

5. The present buildings on the west side of the churchyard were hitherto not properly understood, and this may give me leave to explain them here more fully. The building consists first of three churches in one line from south to north, viz., St. James or Mar Yakoob in the south, R; in the middle the Chapel of Marie Magdalene, S—others say, of the "Forty Martyrs," but this latter name is also applied to the chapel in the belfry, or the northern one of the three, T, which three, perhaps, for a time, formed the "Church of the Trinity." These churches or chapels are high, whereas the others behind them, of Thekla, &c., and some rooms or magazines, are low, forming three stories, for making up the height of the three front churches, which latter are going in towards the west to a line with the western side of the belfry. Behind the belfry is a dark place, used as a magazine, with a well mouth on its floor. (This cistern is cut in the rock, and of considerable size.) South of this magazine a flight of steps leads up into the higher situated Greek Convent. South of these steps is the Chapel of Thekla, U (as I was told), a low, insignificant place, but having a window in its south wall. It is generally connected with "Mar Jacob," or St. James's Chapel. Immediately to the west of this chapel are two dark empty magazines with very thick

walls ; and north of the stairs, extending to the wall of the rotunda, is a cistern, formed so to say above ground, leaning towards the west on the scarp, which is the west wall of this cistern, towards the north the church wall, and towards the east and south plain strong side walls ; the cistern goes up to the full height to the level of the former terrace. But between this cistern and the belfry, and over the whole length, are comparatively narrow but long rooms in two stories one above the other, to make up also here the height of the front churches. The lower of these long rooms is used for storing corn for the convent ; the upper one, which awakened my interest greatly, is divided by thin wooden walls of nicely ornamented and carved boards ; the northern one is a refectory for the members of the synod, the patriarch having his seat in or before a kind of niche at the northern end of the table on the top of the southern apse of the rotunda ; whereas the bishops and others have their seats on both sides of a long table. The entrance is on the west side, and opposite the east is a window just where the belfry ends. The next room is decorated with shelves and pigeon-holes on the walls round about for keeping documents. Also this room had a window in the east, and on the west side a door leading into a nice passage and so to the convent. The third was the sitting room, where the synod held its meetings. It has a door on the east side leading to a staircase going down into the chapel of "Mar Jacob" ; this door looks very old, and is remarkable for its nice carvings and inlaid work. This room has in the south a window towards the broad steps leading down to the church court, and in the west a door leading to the passage with the pillars, of which I have spoken above. The synod no more holds its meetings here, but all things are left as they were in former times, and the place is well worth a visit. North-west of it, in the corner of the rotunda, and under the Church of Constantine, which is the place for the daily worship of the priests and monks, is the bakehouse, with a large oven, and there is the mouth of an interesting cistern, V, spoken of above, S, the lower parts cut in rock, but not the upper part ; it is about 60 feet long, 15 or 16 feet wide, and 20 feet 6 inches deep, having in the middle a row of 10 piers, on which are arches, and over the latter flagstones to make the roof, something similar to the large cistern described in the *Quarterly Statement*, 1889, pp. 111 and 210.

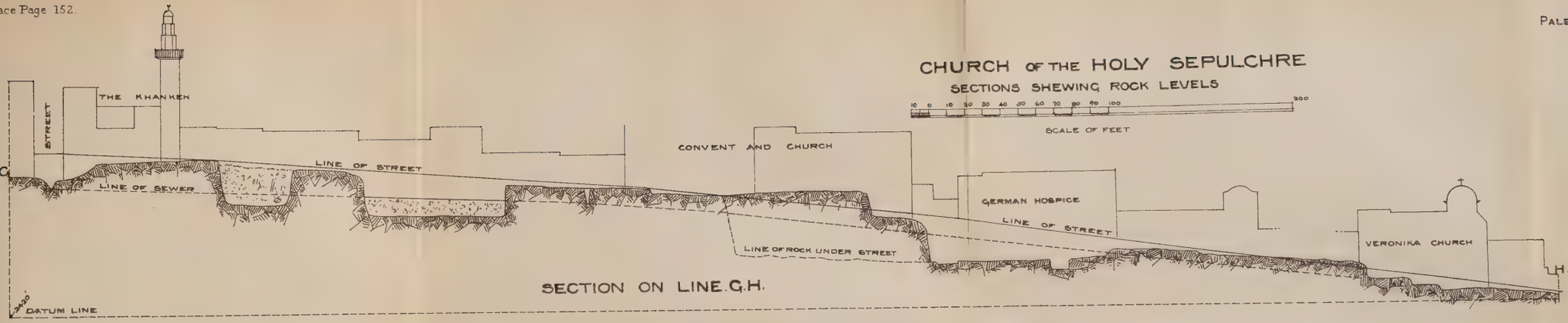
6. As will be seen on Plan No. 1, the "Church of St. James" of the Armenians, W, is on the east side of the churchyard of the Church of the Holy Sepulchre, inside a form different from that generally given in the plans, and on the outside of the wall one can see a very large arch introduced into the wall, which stood formerly on pillars, as may be seen on its north pier, where part of a carved capital looks out from the wall ; the southern one was removed, when a window was made there for a small room inside the wall. Originally this arch must have been open. It is, perhaps, the remains of the former Church of Mary, which would then have stood across the present church court, thus giving meaning to the many piers in the cesspool below. In that case the archway, now filled up, would have been the chancel arch, and the present Church of the Armenians the chancel.

CHURCH OF THE HOLY SEPULCHRE

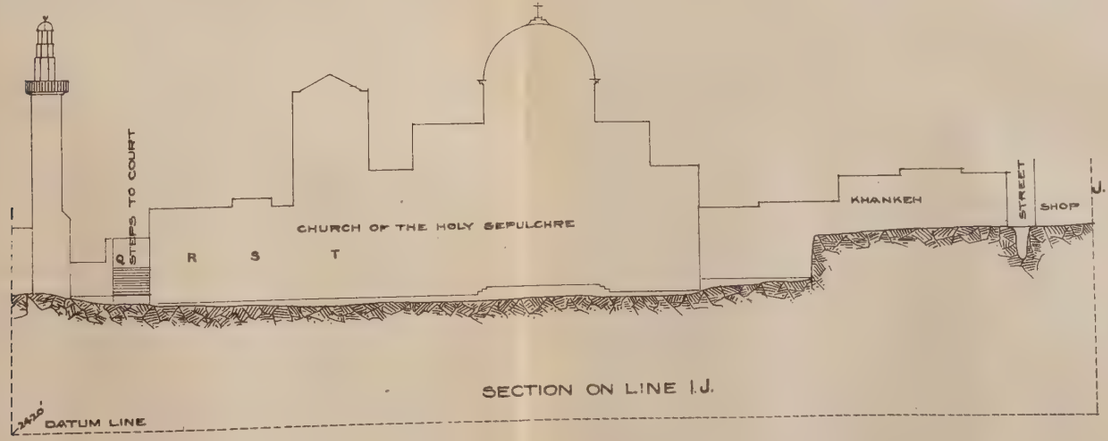
SECTIONS SHEWING ROCK LEVELS

10 0 10 20 30 40 50 60 70 80 90 100 200

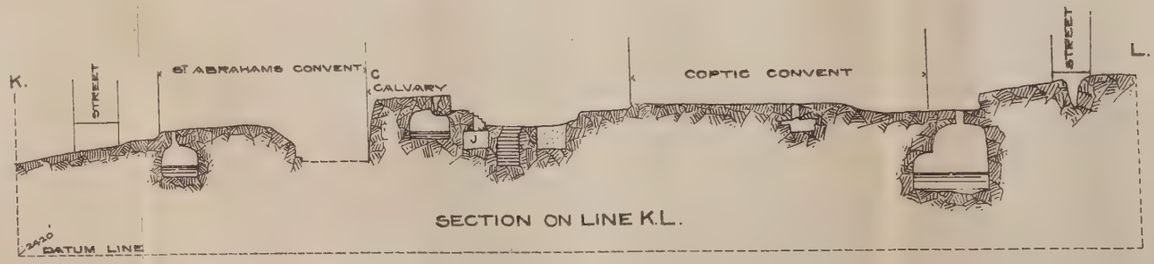
SCALE OF FEET



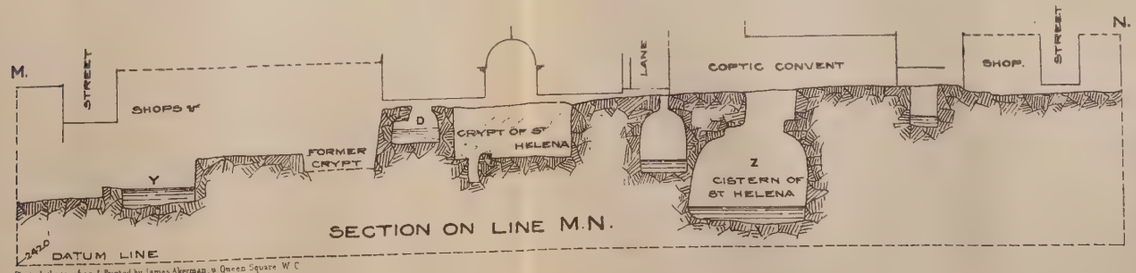
SECTION ON LINE G.H.



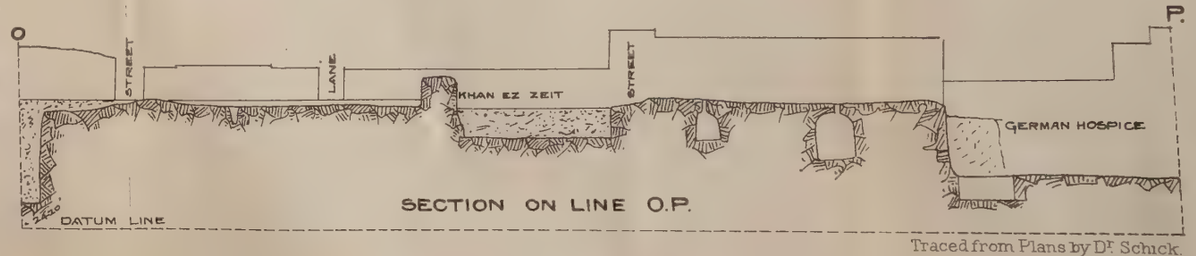
SECTION ON LINE I.J.



SECTION ON LINE K.L.



SECTION ON LINE M.N.



SECTION ON LINE O.P.

Photo Lithographed & Printed by James Akerman, 9 Queen Square W.C.

Traced from Plans by Dr. Schick.

7. In the above I have repeatedly spoken of rooms belonging to the Copts at the rock-cut tombs of Joseph, &c. It is well known, and shown on the plans, that along Christian Street, west of the rotunda and the church, with its annexes, is a long row of shops, but nobody would imagine that under the flooring of the two first of them, south of the large building with the piers, the Copts have some rooms, as referred to above.

II.

Notes and Explanation to the Plans and Elevations of the Site of the Church of the Holy Sepulchre.

The former ridge (or a line of connected heights) in a west-eastern direction was artificially worked out to a large, comparatively level place or platform, and so that the western part was worked down; whereas the eastern, standing in the height, became scarps on the north, south, and east, as a projecting block of rock.

The longitudinal and transverse sections give the rock levels at the different points shown by the red sectional lines, the datum line being taken at 2,420 feet above the Mediterranean.

In order to get the Holy Sepulchre as a free standing monument, the rock round about was hewn down, and for the rotunda (towards the west) made semicircular, as the plan shows. The more eastern, or elevated, place was the site of the Basilica, with the underground Chapels of St. Helena, &c. It ended on the east in a scarp (at the Russian ground); also to some extent there were scarps south and north. The lines of these scarps (now only visible at Calvary and the most projecting part towards the west) were not quite straight.

Towards the north-west, at the Khankeh, the original configuration of the ground was highest; hence here the scarp is higher near the rotunda than on the other side; and except the rotunda, with its chief gallery, the rock was not worked fully down to the general level of the church, but a bench of, in general, 4 feet higher was left. The bottom of the narrow outer gallery is in this western part 12 feet higher than the main level of the church. In the southern part of it are hewn Jewish tombs, now called those of Joseph of Arimathea and of Nicodemus.

In the rocky ground were cut many cisterns, as the drawings show. In some of them only the lower part is rock, the upper portion being masonry. The one (in the east), X, going down to the deepest level of all in the area, is included in the plan. It is in a Moslem house, which apparently was formerly a palace. Next in deepness comes the newly-restored large Cistern of the Greeks, Y, and the one called St. Helena's Cistern, Z (one north and one south of the ancient Basilica). Those under the church and behind the belfry come down to the level of 2,444 feet. In the eastern part (east of the street Khan ez Zeit) there exist a great

many cisterns, all hewn in the rock, but comparatively smaller, the deepest of them (already mentioned) going down to the level of 2,408 feet.

It is remarkable that only the eastern part, or about one-third of the whole, has regular scarps on three sides, and to a considerable height. This, I think, indicates that this part is the oldest, and done long before the church was built, and most likely the ancient Akra, or a fortress dating back to the most ancient Jerusalem—if even not Zion, as Sir Charles Warren suggests, there was such a place, as he showed in his book, "The Temple or the Tomb," p. 33, but he put it only too far south-east on his Contour Plan. West of it the ground is still higher, but already falling in the ground of the later churches ; and there, I think, stood a castle mentioned in Nehemiah iii, 7, where the governor Nehemiah had his residence, and so this whole height would have been called at that time Thekoa (verse 5 ; *cf.* Jer. vi, 1).

This castle was certainly connected with the second wall, first built by Hezekiah (2 Chron. xxxii, 5), and probably the tower Josephus mentions in (about) the middle of the second wall ("Wars," V, vii, 4). The continuation of this wall towards the Corner Gate, &c., is difficult to point out, and I will leave the answer to more competent men.

When, afterwards, the church was built, the place was enlarged by breaking away the rock westwards, where the ground was rising, working into the hill, and so producing the state of things we find to-day. As the place was prepared for a church, and not for a castle, there are towards the north no proper scarps, and those on the south side were caused by quarrying stones there, as it seems to me, in the time when the Royal City, under David and Solomon, and the Temple were built, and the eastern part of this platform, as already described, was made. The deepening in this eastern part (*Quarterly Statement*, 1897, p. 27) was at that time very likely used as a pool or water reservoir, into which afterwards the pillars were put. The reason for leaving at its south end a rock block I do not know.

That this rock platform extends somewhat towards the south we know by the fact that in the Southern Street (*see* Section IJ) the rock looks out nom the surface of the ground ; and that about 120 feet south of it is no rock, but a great depth or abyss, was proved in 1872 (*see Quarterly Statement* of that year, p. 47).

In this projecting part of the rock platform is a large cave, similar to that in the so-called "skull" hill—"Hedemieh" or Jeremiah's grotto-hill, north of the city. Also, the scarps are there as in the south and east, &c., of the Church of the Holy Sepulchre platform-hill, as described above ; only that Jeremiah's grotto-hill is isolated, whereas this platform is connected with higher ground on its west side.

REPORTS BY DR. CONRAD SCHICK.

I. Old Font in the Church of the Holy Sepulchre.

During the above-mentioned investigations I have been several times to the Church of the Holy Sepulchre and made some minute researches there, of which I report in the above, but wish to mention something more—first that I found an old *font* there, standing no longer in its original place, but put aside a long time ago in the corner at the passage from the northern (former) apse of the rotunda, leading to the well or cistern, and the Latin or Franciscan Convent, which passage is very dark even when the sun shines, and this seems to be the reason that this font was always overlooked. As it was partly broken and was lying with other stones there, it was thought to be merely one out of a heap of stones. It is square, each side measuring 3 feet 8 inches and 2 feet 3 inches high, all one stone. The hollow inside is rather interesting; it is neither square nor round, but consists of four segments of circles, forming leaves or wings, and for about 16 inches perpendicular and then rounded out towards the centre as the plan and section show. One side is broken away to a great extent, and on the top of it is lying a flagstone somewhat larger, but only 5 to 6 inches thick, which, I think, was once the *basement*. So when the hollowed block (the font) was removed from its original stand to this place, its base also was removed and then put on the top of it. I think it stood once in the place which is now used as the refectory of the Franciscan Convent which seems to have been the *baptistery* of the Latins for some considerable time when the Chapel of the Apparition (or of Mary) was built in the fourteenth century. In it then stood a pair of pillars—one removed when the place was converted into a refectory by putting across a thin wall and so making the present *passage* to the well and the convent. The other pillar is still standing in the thickness of this (not thick) partition wall. I found that even Quaresimus, 2,371A, mentions in A.D. 1620 this very font, saying:—"There is the old marble font of the church, outside square, and inside rose shaped, in the neighbourhood of the cistern."

II. The "Cave of William the Hermit."

We know that in the twelfth century a certain "William," called the "Hermit," was living in a rock cave in the neighbourhood of the Holy Sepulchre. This "cave" cannot be the one with the so-called "tombs of Joseph and Nicodemus," as the latter are mentioned before, so we have to look in this region for another cave, and such a one I found north of the western apse of the rotunda, the tombs mentioned being south of it. This cave is situated on a higher level and is much larger, forming two rooms connected one with the other, or one room with a pier in the middle,

and cut in the rock, so that the walls and the roof are rock, but the fourth side towards the church (or east) is masonry. The rock rises here about 28 feet above the general flooring of the church; the top of the rock forming to some degree the *flooring* of "Maghsan el Belik" (the magazines of Government), or the magazines in Christian Street, in the high building, with the many crusading buttresses—once belonging to the palace of the Latin Patriarch. With this palace the "cave" of William was in some connection.[1] So that there is little room for doubt that the rock rooms I found under the magazines were the "cave of William the Hermit," who might really live a hermit life here in this underground apartment (yet higher situated than the flooring of the church), and getting only some light through the door of the room; it had not any other window or light-holes. The rock roofing seems on one side not very strong, as there is put a pile of masonry to support it, very likely done when the large building was erected over it, also when the high cave was made of *two* stories, by corner-piers, and in the middle a wall was put in, on which rests now a rather flat arch or vault, so that two stories were formed one above the other, but both rather low, on an average only about 7 feet high. The place belongs to the Greek Convent, various stores being now kept there as in a cool cellar, especially oil for the lamps of the church.

It seems the cave was existing already—at least some part of it—when the Patriarch's Palace was erected, and preserved, as west of it, when the present Christian Street there was made, the rock was *lowered*, as was found to be the case some years ago when the drain was made.

III. A New Collection of Antiquities.

When investigating closely the question whether the rock of Calvary is really rock or a block of stone brought there I wished to examine the back room of the Greek Archimandrite's place—called in Sir Charles Wilson's plan of the church (Ordnance Survey Office, Southampton, 1892) "Dwelling of the Greek Prior." I found that the former partition wall had been recently taken out and replaced by a much thinner one put more to the east so as to make the first or western room larger, and all the sides of the chambers (also the now smaller inner room) freshly plastered over, so that I could not see whether it is masonry or, perhaps, in some parts rock, and the prior could not tell me what is behind. Thus far my searchings had, therefore, a negative result, but what I found in this inner room was a very interesting and costly collection of various kinds of antiquities, put up under glass very nicely and with much skill. As the place is totally dark a number of lamps were lighted, and the things were glittering so that I got the impression of having come into a sanctuary. I had not time enough to see all the various articles and to study them, but had to be content when some were shown and explained to me; for instance, a cross in which a particle of the True Cross is said to

[1] Tobler, "Golgotha und seine Kirchen, St. Gallen," 1851, p. 356.

be inlaid, and similar things, also the old Greek (heraldic) Eagle which I at once pronounced to be the Russian Eagle. They said, "Yes," but added "originally it was Greek and later on adopted by the Russians." I said :— "How things are changing! I was in this room 30 years ago, when it was not only empty but looking like a ruin, stones and earth lying about, and no plastering on the walls, but now this collection makes it a glittering sanctuary." At the time of that early visit I had no interest in the rock, and hence did not examine the walls for that purpose, which I now consider as a pity and regret the neglect.

NOTES ON THE "QUARTERLY STATEMENT."

By Professor Clermont-Ganneau.

1. *Sculptured Head from Na'aneh* (January, p. 26).—This head has already been described and engraved in my "Archæological Researches in Palestine," Vol. II, p. 26, from our drawing made in 1873. This curious bit of carving at that time formed part of the stone floor of an Arab house at Jaffa. It does not come from Na'aneh, which is near Gezer, but was brought in the course of time from the ruins of Cæsarea. It has probably since been sold to M. Von Ustinow, who was told this fiction about the place from which it came in order to increase its market value.

2. *Greek Inscription at Wâdy Barada* (p. 31).—I think that from the evidence of the facsimile itself we ought to read, not Διὶ [Ὑψ]ίστῳ Ἡλιοπολειτ(ῶν), as Dr. Murray proposes, but rather Διὶ Μεγίστῳ Ἡλιοπολείτῃ. *Megistos* is, moreover, an epithet frequently applied to Zeus in the Greek inscriptions of Syria (*see* Waddington, Nos. 2,116, 2,140, 2,289, 2,292, 2,306, 2,339, 2,340, 2,412, 2,631). There is, consequently, no reason whatever for comparison with Zeus Hypsistos. Besides, it has nowise been proved that this last word, as is supposed by Dr. Murray, relying upon Schürer, and Cumont, has any specific connection with the Jehovah of the Jews. In addition to the two Beyrout inscriptions, the only ones with which these gentlemen appear to be acquainted, one might quote *seven others in Syria*, all from Palmyra. Some of these are in two languages, and the Palmyrian part shows that the Semitic divinity represented by Zeus Hypsistos is *Shamesh* (the sun), or the nameless god so popular at Palmyra, who is mentioned in the well-known formula, "To Him Whose name is blessed for ever, the Good and the Merciful" (טבא ורחמנא).

The official title of Jupiter of Heliopolis in the inscriptions is Jupiter Optimus Maximus—which favours the reading, Μέγιστος.

3. *Inscription at Jerash* (p. 33).—These two fragments belong to a text which was complete last year, and the whole of which was copied by M. Brünnow ("Mitth. und Nachr. des Deutsch. Pal. Verein," 1879, p. 38). Dr. Murray's attempted restoration wanders far away from

the original text. Anyhow, this inscription has no connection with Mr. Waddington's No. 1,907, which clearly belongs to the first century of our era, whereas this bears the date of 321 of the Pompeian era, which corresponds with our A.D. 257. The small other fragment, as Mr. Thomson has discerned, forms part of the original stone; it contains the fifth and sixth lines thereof. Ὁ ἀχθεὶς βωμός perhaps means merely that the altar was brought from some other place.

4. *Inscription of the Xth Legion Fretensis* (p. 35).—This should read: "D(iis) M(anibus) L(ucius) Magnius Felix mil(es) Leg(ionis) X Fret(ensis), b(eneficiarius) trib(uni). Mil(itavit) annos XVIIII: Vix(it) XXXIX." It is, therefore, the epitaph of a soldier of the Xth Legion Fretensis, who died in his 39th year, after nineteen years of service, and who was a *beneficiarius*—that is to say, one who has received a privilege—of the tribune in command of his legion. Jerusalem has long since furnished several inscriptions connected with the famous legion which played so great a part in its destiny. I may be permitted to remind my readers that I was the first to open this series to the epigraphy of the world some 26 years ago (*see* my essay on "Three Inscriptions of the Xth Legion Fretensis, discovered at Jerusalem," Paris, 1872).

5. *The Inscription on the Aqueduct at Siloam* (p. 57).—Mr. Pilcher and other learned men are wrong, I think, in attributing to the word נקבה in this inscription the concrete meaning of "tunnel." The word, which occurs twice, does not mean the tunnel itself, but "*the act of piercing the tunnel*," which is a very different thing.

6. *The Cufic Inscription from the Basilica of the Holy Sepulchre* (p. 86).—Readers who may wish to consult my exhaustive essay upon this matter, which is alluded to by M. Van Berchem in his interesting notice (p. 93), and upon the historical and archæological conclusions of which, as he himself says on p. 9, note 1, his own theory is based, will find it in Nos. 18–23 of Vol. II of my "Recueil d'Archéologie Orientale" (pp. 302–366: *la Basilique de Constantin et la Mosquée d'Omar à Jerusalem*). I may be permitted to add, in connection with this subject, that the obscure words,

الحضرة المطهّرة

which occurs in this inscription, perhaps means simply "His Purifying Majesty," and alludes to the very act of the Caliph in restoring to the Mussulman worship the sanctuary which was thought to have been usurped by the Christians.

7. *The Length of the Jewish Cubit* (p. 103).—There is a most important factor of which no one hitherto has thought of making use to bring about a solution of this vexed question. We have at this day four Israelitish inscriptions of a date unquestionably earlier than the Captivity: the two inscriptions which I discovered in the village of Siloam in 1870, and sent to the British Museum, where they may now be seen; the fragment of a hitherto overlooked inscription which I noticed above the door of the monolithic chapel in the Egyptian style of architecture, in

the same village ; and, finally, the inscription on the aqueduct of Siloam. These four inscriptions, all close to one another, are all alike in one respect : they are all carved on the surface of the rock, and *inscribed inside rectangular cartouches countersunk into the rock*. The frames of these cartouches are all of different sizes, but their heights and breadths, being all linear functions of one another, evidently are not due to chance, but represent aliquot parts of some regular standard of measurement—that is to say, the graduated rule used by the stone-cutters to mark out their surfaces. It will at once be seen how much the observation of this fact may help us in determining the length of the Jewish cubit. The calculations which I have made with this object have brought me to some conclusions of great interest, which it would take too long to explain here. I can do no more than earnestly urge those who devote themselves to the solution of this problem to avail themselves of this hint, which hitherto has been altogether overlooked, and which might lead them straight to the discovery of the truth.

8. *Les Matroniyát de l'Eglise du St. Sepulchre* (in my essay on "The Taking of Jerusalem by the Persians," *Quarterly Statement*, p. 52, No. 24). — It is, perhaps, simply a transcription of the hybrid Gréco-Latin word, Ματρονικον, *matroneum*, which designates in the Byzantine churches the place reserved for women.

TWO BUSTS FROM CÆSAREA.

By the Rev. J. E. Hanauer.

I forward herewith photographs of two beautifully-preserved life-size marble busts, which are said to have been dug up at Cæsarea, and are now in the collection of Baron von Ustinov, here in Jaffa. One of these—that with the fillet round the head—is supposed to represent Plato ; the other has the name "Olympiodoros" carved in one line in Greek letters across the stone, just above the lower edge.

At least eight eminent men named "Olympiodoros" are known in history. We cannot be sure which of these is represented by the bust, but the fact of its having been discovered together with one of Plato would seem to indicate that we have before us a likeness of "the last philosopher of any celebrity in the Neo-Platonic school of Alexandria . . . . where he taught before the school was finally suppressed by Justinian, A.D. 529." He wrote a biography of Plato, and "Scholia," or commentaries, to several of the latter's "Dialogues."

I would just venture to remark that, as the supposed bust of Plato does not seem to show in any very marked way either "the broad chest or the broad forehead" (Brockhaus, "Conversations Lexikon"), from which some assert that the great sage derived his name, it was probably the work of a sculptor who endorsed the views of those who maintained that the name was given in consequence of the fluency

of his speech (Diogenes, "Laert.," III, 4; "Vita Platonis," p. 6, *b*; and Tychsen, "Bibliothek der alten Literatur und Kunst," V; references given in Smith's "Dictionary of Greek and Roman Biography," Vol. III, Article "Plato").

MARBLE BUSTS FROM CÆSAREA.

There is in the Vatican a bust of Plato which has hitherto been considered unique. That found at Cæsarea resembles it, and I understand that the Baron has lately, at the request of the persons who have charge of the Vatican antiquities, sent copies of the photographs now in your hands, and for the purpose of comparison.

DAVID'S TOMB AND THE SILOAM TUNNEL.

By Rev. W. F. Birch, M.A.

It is certain (*Quarterly Statement*, 1895, p. 261; 1890, p. 204) that the Sepulchres of David were on Ophel (so called), and also, I believe, within the wall of Nehemiah (1886, p. 34; 1879, p. 179), and were so situated that the course of the wall, after passing the pool of Siloah at the southern end of Ophel, and after reaching as far as the stairs that go down from the city of David (Neh. iii, 15, 16; close to which stairs the wall itself went up, xii, 37), came at some point as far as over against (*i.e.*, opposite to, in face of) the sepulchres of David, and thence was continued as far as the pool that was made and as far as the house of the mighty men.

It is necessary to be thus painfully precise, in order that the uncertainties attendant on the search for the said sepulchres may be reduced to a *minimum*. To speak briefly, the sepulchres fronted the wall between the foot of the stairs and the pool that was made. Unfortunately, Dr. Bliss's excavations were cut short before the position of the said stairs and pool was definitely settled.

My conviction is that the wall of the pool of Siloah (1897, p. 74) was adjacent to the great dam; that the stairs may have ascended Ophel from close to the north end of the dam; that the steps (1897, p. 263), discovered a few hours before the excavations ended, may very probably have to do with the course of the said stairs; and that the pool *that was made* (if this description is genuine and not a clerical error for *the old* pool, 1890, p. 205) must have included the site of the present upper pool of Siloam (1897, p. 74); although, so far as I can see, there is some difficulty in drawing Nehemiah's wall *as far as* (1890, p. 266) this said present pool, and, indeed, *as far as* any pool placed even in the Kidron valley, south of the Virgin's Fount, *i.e.*, Gihon.

Satisfied as to the topographical accuracy of the Bible, I cheerfully return to the attack of the difficult question of the position of David's tomb; and though Herod was scared by fire in his second attempt, and the Fund was repulsed in Dr. Bliss by the expiring firman, I rejoice that Professor Ganneau at once blows a trumpet call to a fresh assault—get a firman, dig in the bend of the Siloam tunnel, and in six weeks (you may) find the sepulchres of David. Who will show himself a peaceful Joab, by being the first to get through the subterranean passage into the long home of David? I shall welcome any discoverer, even from the land of Sinim. Nehemiah did what he could to point out to posterity the position of the sepulchres. To me the long way of first making sure of the *stairs* and *the pool that was made*, seems likely in the end to be the shortest. Still, if French dash can, by a short cut, more speedily lead us to victory, let it be so.

Meanwhile it may be well to examine Professor Ganneau's theory, that David's tomb was (1) of Phœnician type, *i.e.*, entered by a vertical shaft, and (2) situated in the great bend of the Siloam tunnel ("Athenæum," 1897, p. 361).

(1) No old Jewish tombs, entered by a vertical shaft, have, so far as I know, yet been discovered near Jerusalem. The shaft tomb lately found (1897, p. 248) proves nothing as to Davidic Jerusalem, *if* its date be Christian, as pointed out by Lieut.-Colonel Conder (1897, p. 83). The cave of Machpelah seems to have been of the ordinary type, with its entrance in a perpendicular face of rock. The same position for the door apparently marked the tomb prepared by Shebna; Isaiah, xxii, 16, "Thou hast hewed thee out here a sepulchre, hewing him out a sepulchre on high, graving an habitation for himself in the rock" (Hebr. *sela*, a *cliff*). This led me to adopt the vertical position (1879, p. 176), although Sir C. Wilson then thought that the entrance was possibly by a shaft, like a well. In favour of the Phœnician "shaft" type it might be urged, on the other hand, that as David had Phœnician stonecutters to build his house, so they might make him a Phœnician tomb; and that the Jews thought (1877, p. 134) that on the way from the Temple to Siloam there might be a "Sepulchre of the Abyss," which term was explained to mean a hidden tomb, the depth of which was not known to any man. So far the evidence is extremely meagre.

Professor Ganneau, however, impresses into his service the statement of Josephus ("Ant." xvi, vii, 1) that Herod erected a white stone monument *on* (others say *at*) the mouth (*ἐπὶ τῷ στομίῳ*) of David's sepulchre, and adds:—"This characteristic expression, *στόμιον*, implies expressly, to my mind, an entry not in the form of a door in the rock of a vertical shape, as every one supposed, but an entry *in the form of a pit*." The fact, however, that the same writer, four times in one chapter ("Ant." xiv, xv, 5) uses the same Greek word, *στόμιον*, to describe the entrances to the robbers' caves in the precipices of Wady Hamam in Galilee, shows that the word is neutral in this controversy, and does not necessarily imply that David's tomb had an horizontal opening.

Nor can *ἐπί*, with the dative, be forced into necessarily meaning *on*. This is clear from the frequent expression in LXX and New Testament, *ἐπὶ θύρᾳ* or *θύραις*, at the door or doors. In reference to the tomb of Lazarus we read (John xi, 38, R.V.): "It was a cave, and a stone lay *against* it" (margin or *upon*, *ἐπέκειτο ἐπ αὐτῷ*), on which Professor Wescott observed: "Thus the word rendered *lay upon it* does not necessarily describe a pit. The sense may be better given by *laid against it*." The reader will by this see that Josephus is neutral.

(2) The approach of Sennacherib undoubtedly led Hezekiah (2 Chron. xxxii, 3, 30; 2 Kings xx, 20; Isaiah xxii, 11; Eccles. xlviii, 17) to make the S-shaped tunnel from Gihon to the southern end of Ophel, near Ain Silwân. Ten years ago Professor Ganneau "ingeniously suggested" ("City and Land," p. 20) that the remarkable curve in the southern part of this conduit was "due to the existence of the tomb and

the necessity of avoiding it," the shaft to the tomb reaching at least down to the level of the tunnel of Siloam ("Athenæum").

The reader is invited to refer to the plan of this S tunnel, and he will notice that it has also a *northern bend*, smaller, indeed, but more extraordinary than the other, inasmuch as to reach a south-west-by-south terminus, the course actually goes more north than the starting place. Was the object of this northern bend to avoid tombs? If so, whose tombs were they? An explanation of this bend must be given. Was Melchizedec (Heb. vii, 3) buried hereabouts? Or was David, if the pool that was made was near Gihon? For myself, I demur to tombs having caused either bend.

From the internal evidence of the tunnel, I think it might be shown clearly, if time permitted, that the said tunnel (from the part leading to the Jebusite shaft to Ain Silwân) was, in an emergency, begun practically at the same time from both ends, before there was time for proper levelling; that the northern miners not starting from daylight, but from a point 50 feet along the Jebusite tunnel (so tortuous that "six feet lengths could only be got into the passage," by Sir C. Warren, "Letters," p. 38) mistook the right direction from the first, being six points wrong; while the southern miners, starting from the surface, took an admirable aim at Gihon, and kept on very fairly for 160 feet.

Meanwhile the chief engineer had gained time for quiet reflection, and modified his plan. Accordingly, on the south the miners were made to strike right across the axis of Ophel, so as to come under its eastern lower slope, and learning there, by the aid of persons tapping overhead, their position, they opened up a shaft (as shown in plan) to the surface at 470 feet from Ain Silwân. It is obvious that before this they had corrected their level. Now striking north from the shaft the southerners, still using overhead tapping, easily forged ahead, getting in fresh air and putting out rubbish through their invaluable shaft, and so, on an average, making progress at the rate of 10 feet to the 6 or 8 feet, at the most, of the unhappy northerners. Of course, the latter had easily obtained the right level from Gihon, and could be confident that, by keeping well to the west, they must eventually outflank the southerners, as it would be impossible for the latter to pass them, if the two levels were tolerably alike. But beyond this single advantage, the northerners had a very bad time of it, ignorant from the very outset (so far as I can see) of their proper direction, with no overhead jumper in crowded Zion to give them a bearing, without any ventilating shaft in all their own 762 feet of tunnel, not to mention the initial 50 feet of Jebusite work at Gihon, while their more fortunate rivals were, even at the last, not more than 474 feet from open air.

Perhaps our Hon. Secretary will describe the terrible miseries endured by these north-tunnel Jews in their mining task, carried on always at high pressure through weary months, day and night, without ceasing, amid ignorance of the true course, in air so vitiated that lamps at times would hardly burn (as in the long tunnel, which, however, was *ascending*.

"Warren's Letters," p. 68), with chippings to be discharged through a passage kept to the smallest practicable dimensions, evidently $3\frac{3}{4}$ feet high and 2 feet wide (*Quarterly Statement*, 1891, p. 18), along a distance, at the last, of some 800 feet, and all this without one friendly tap overhead to show that others were thinking of them. It was, indeed, a grand moment when first they heard the thud of the southern pick. How great the ecstacy of their joy as the hole was knocked through the soft rock, and the draught blew out the lamp and wafted through the tunnel a deafening cheer towards Gihon or the shaft! Well might the feat be recorded in the Siloam inscription. Such seems to me to be the story of the tunnel as recorded in its windings.

The fact that the southern miners in the first 470 feet practically described an arc with its convex side northwards, instead of excavating in a direct line, so far as they could, to the position of their shaft, suffices, apparently, to show that the avoidance of the sepulchres of David is not the correct explanation of the great bend. Even if Professor Ganneau's position for the tomb be right, his argument from Josephus does not seem to me sound.

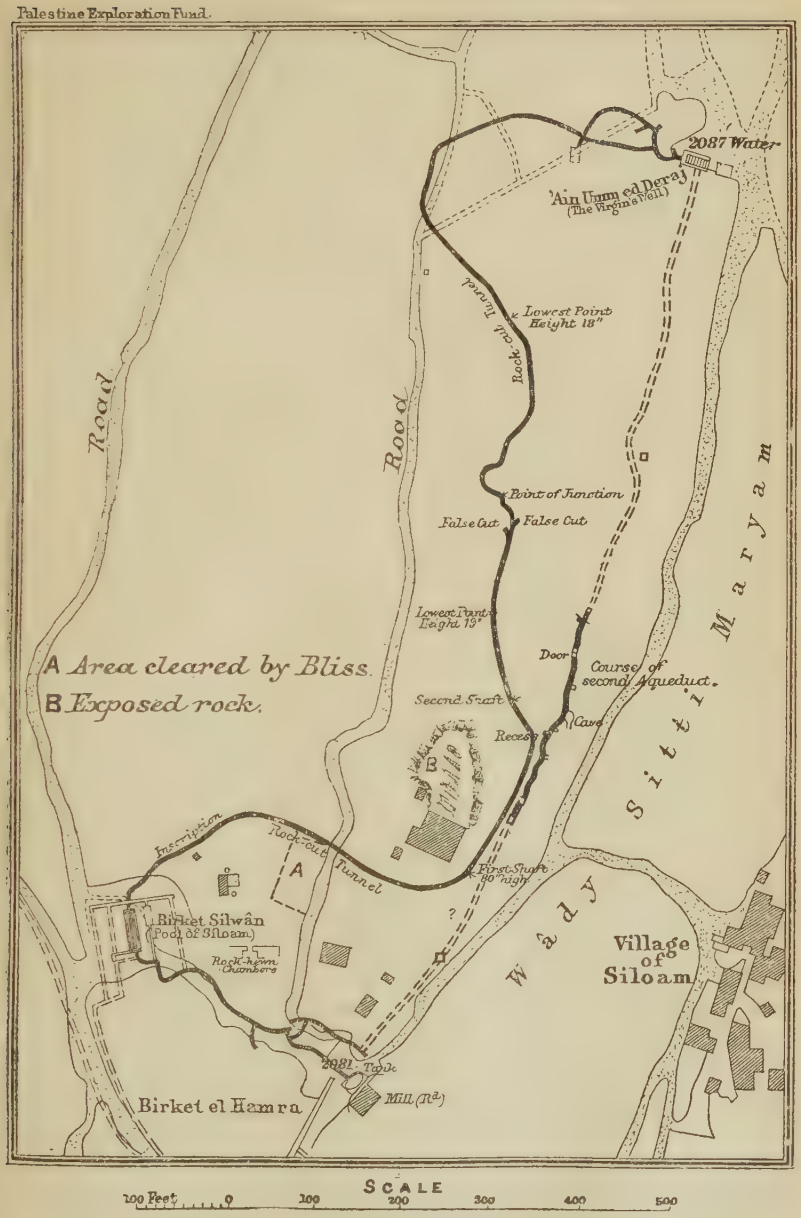
The following is the letter of M. Clermont-Ganneau referred to in Mr. Birch's article. It is reprinted by permission from the "Athenæum" of September 11th, 1897 :—

The chief problem of Hebrew archæology is without a doubt the discovery still to be made of the tomb of David and the kings of Judah. This question, so many times mooted without result, has been once more raised by a passage in the last report of Dr. Bliss, published in the *Quarterly Statement* of the Palestine Exploration Fund (July, p. 180). In this we read :—

"*It has been suggested* that the apparently unnecessary curve in the Siloam Tunnel before it enters the pool was made in order to avoid the tomb of the Kings. Accordingly we have made a large clearance to the Rock of Ophel in a field to the east of the pool, *south of this curve* . . . . Our hope was to find a *pit* entrance to the tombs, but the clearance has been completed this morning, and no such discovery has rewarded our toil."

The attempt of Dr. Bliss has led incidentally to the discovery of an interesting small cornelian seal of scarab shape, with an inscription in Israelitish Phœnician characters dating before the Exile, of which I will speak later. But it has failed completely to realise the splendid object in view—the discovery of the tomb of the Kings. The result could not have been otherwise, for reasons which I shall explain.

First, I may be allowed to remark that the suggestion, whose author Dr. Bliss does not name, is mine. I am, therefore, responsible for it; and as the event seems to have proved it to be wrong, it only gives me a greater right to examine the means adopted for verification. The theory of the close connection of the extraordinary deviation, up till then



PLAN OF SILOAM TUNNEL.

unexplained, of the tunnel with the position of the tomb of the Kings, was expounded by me at length 10 years ago in the "Revue Critique" (October, 1887, pp. 329–343), and supported by a schematic plan, which even marked on the ground the point where, as I calculated, the royal vault ought to be concealed. As I am unable here to reproduce this plan I will content myself with an explanatory description. The place is between the southern curve of the tunnel and the intersection of the path which descends from the south-east angle of Haram to the Pool of Siloam, with the level of 2,179 in the map of the Ordnance Survey on the scale of 1 : 2,500 (towards the bend made by the path). I pointed it out more than once to members of the Committee of the Palestine Exploration Fund, and I have every reason to believe that it was owing to instructions given by the Committee to Dr. Bliss that he attempted this excavation *in extremis*, unhappily at the moment when the firman granted by the Porte was expiring. It is to be regretted that I was not consulted on that occasion, for I could have furnished indications which might, perhaps, have not been useless towards achieving success and avoiding a failure of a sort calculated to discredit my theory. In fact, if my article was known either to Dr. Bliss or to those who inspired his efforts, its conclusions were misunderstood, and, consequently, it is only my bare duty as a scholar to explain things.

The digging was made *on the south*—that is, *outside the convex side*—of the curve of the tunnel, which I regarded as due to the necessity of avoiding the vault, which lay full on the straight line of the source of the Fountain of the Virgin at the Pool of Siloam. Now, on the contrary, it is, as I have expressly indicated, on the *north* of this curve—that is, *inside the concave side*—that the digging should have been, and must be in the future, made, for the curve naturally encloses and partly envelops the obstacle interposed, since it is meant to pass round it. Dr. Bliss has then, one can see, proceeded to do exactly the opposite of what he ought to have done.

I may be allowed also to claim the authorship of the idea of which Dr. Bliss speaks in passing as if it was an obvious datum, viz., that the entry of the tomb of the Kings should be a pit, by which descent was made into the royal vault. This idea, which I submitted at the time to M. Perrot, was adopted and briefly mentioned by him in his "History of Art in Antiquity" (vol. iv, p. 336); it is to be found stated at greater length with reasons in the same article of the "Revue Critique" of 1887. And this was no gratuitous conjecture of mine due to pure imagination. It rests, in fact, on the reasonable interpretation of a particular passage of Josephus ("Ant. Jud.," xvi, 7, 1), the bearing of which had not up to that time been recognised. This passage says that Herod, after having desecrated and pillaged the royal vault, constructed a monument to atone for his conduct *on the mouth of the vault* (ἐπὶ τῷ στομίῳ). This characteristic expression στόμιον implies expressly, to my mind, an entry, not in the form of a door made in the rock of a vertical shape, as every one supposed, but an entry *in the form of a pit*. I need not insist on the

importance of these data, so material to guide the digger who would make an attempt on the ground in the right place; we must look here not for a vertical entry consisting of a gate more or less monumental, analogous to that of the ordinary Jewish tombs, leading to a series of mortuary chambers sunk horizontally in the mass of the hill, but the mouth of a pit, probably rectangular, relatively of very small dimensions, perhaps not more than two metres long and a metre wide, that is, large enough to pass in a sarcophagus. It is easy to understand that an opening so small is very likely to escape notice, unless great care is taken; and this is, perhaps, why the entry to the vault has defied all attempts at discovery up to our times. This pit, analogous to the mortuary pits of Phœnicia and Egypt, must descend into the vast chambers of the vault, which possesses probably several stories, and plunges, if my theory is sound, into the depth of the hill, at least down to the level of the Tunnel of Siloam.

This is the *thing* to look for and *the place* to look for it. With a few thousand francs, a new firman authorising operations, and six weeks' work, any one can satisfy himself. I present amateurs with the suggestion. Well-founded hopes of discovering the sarcophagus of David, Solomon, and their successors, with the inscriptions which must have been engraved there, will surely make the small outlay worth while.

Lastly, I will say a few words about the ancient Israelite seal so happily discovered by Dr. Bliss in the course of this last excavation. It is reproduced in the same number of the *Quarterly Statement* with various attempts to interpret it.

Like several other Israelite seals of the same archaic date which I have had occasion to study in former times,[1] this one bears two proper names in simple juxtaposition, without being preceded by the *lamed possessoris* or connected by an indication of patronymic or otherwise. The first name is easily read "Ishmael." Not so the second, which has been variously rendered: by Père Lagrange, בריח, Bariach; by Professor Sayce, first בר יהו, Bar-Yahu, then פריהו, Paryahu. None of these readings appears to me satisfactory. I recognise in the second letter a *daleth* in place of a *resh* (the two characters have the same form in this archaic Israelitish alphabet), and I propose to read this difficult name thus: פדיהו, Pedayahu. This is an excellent Israelitish name found exactly so written in 1 Chron. xxvii, 20, and in the shortened form פדיה, Pedayah, in 2 Kings xxiii, 36; Neh. iii, 25, viii, 4, xi, 7; 1 Chron. iii, 18. It is clearly formed from the root פדה, "to deliver," and the divine title of Jehovah (Yahu): "Yahu has delivered." It is closely related to other Biblical names of the same family, פדהאל, Pedahël; פדהצור, Pedahsur, and to that which I have deciphered on a very old Phœnician seal: פדאל, Pedaël.

[1] *See* my "Recueil d'Archéologie Orientale," vol. ii, pp. 27 and 116. On the second seal the two names, notoriously Israelite, Ahaz and Pekhai, are in juxtaposition, without being preceded by the *lamed possessoris*, as in the newly discovered seal.

THE VALLEY GATE.

By Rev. W. F. Birch, M.A.

In *Quarterly Statement*, 1896, p. 172, Professor Wright places this gate on the south side of the Upper City, and thinks it is an error to place it near the Jaffa Gate (1879, p. 178).

Let me give the evidence fixing its general position. In the expressions "valley gate" and "valley of Hinnom," the Hebrew word for *valley* is *gai*, thus showing that the two localities were connected. It has been proved that the valley of Hinnom was not the south-west valley as supposed by Professor Wright, but the valley passing through Jerusalem from near the Jaffa gate to Siloam (1878, p. 180; 1882, p. 56; 1889, p. 38). To restate the case briefly—The border between Judah and Benjamin passed through Hinnom (Joshua xv and xviii). Jerusalem is assigned to Benjamin in Joshua xviii, 28, and regarded as theirs in Judges i, 21; but is also regarded as Judah's in Joshua xv, 63; Judges i, 3, 8.

(1) The popular line for the tribal boundary through the south-west valley, *i.e.*, Wady Rababeh, places Jerusalem wholly in Benjamin, and so is evidently wrong; while the line through the Tyropœon, or central valley, dividing the city, gives a portion to both tribes, obviates all difficulties, and is, therefore, manifestly right. The line ingeniously drawn by General Gordon (letter, 1883) and Dr. Schick (*Quarterly Statement*, 1884, p. 184), both gives to either tribe a part of Jerusalem, and accepts the south-west valley as Hinnom; nevertheless, the scheme fails for the following reason:—

(2) Tophet was part of Hinnom, and (so far as I can see) has been proved to have been within Jerusalem (1897, p. 72). But Wady Rababeh was wholly outside Jerusalem, therefore it could not possibly be the valley of Hinnom.

(3) A third reason is that Jeremiah (xxxi, 38–40), after foretelling the rebuilding of the city, gives an orderly description of its environs (1878, p. 180; 1882, p. 58; 1889, p. 43), mentioning "the whole valley (N.B., *emek* not *gai*) of the dead bodies and of the ashes and all the fields unto the brook (*nachal*) Kidron," &c. Why is the south-west valley here called *emek* and not *gai*? Why is no mention whatever made of the famous valley (*gai*) of Hinnom? As no one will answer my questions, let me do so. Because the south-west valley was not Hinnom. Because Hinnom was *inside* Jerusalem, and, therefore, could not be named as outside of it (1897, p. 72).

These three straight blows would suffice to kill the Hinnom myth, if it were mortal; but, unhappily, topographical error can only be stunned for a little. If it suits some to revive it, it suits me also to refute it. When the central valley has thus been proved to be the valley of Hinnom,

it follows naturally that the valley gate must have been in a position near to, or leading into, that valley, and also affording egress to the western exterior of the Upper City. Professor Wright's site leads neither into the *gai* nor to Tophet (1897, p. 73), but into the *emek*.

It might be added that with the valley gate near the north-west corner of the Upper City—the expression (Neh. xii, 31) *on the right hand* —precisely describes the southern march of the Ezra procession.

The theory of Robertson Smith and Professor Sayce (1884, p. 73) entirely excluded the south-west hill from præexilic Jerusalem, and so, of course, did not locate the valley gate near the Jaffa gate. Neither of these writers, however, made good his theory in these pages. I have pointed out (1889, p. 209) how absurd it would have been for the Jews to have made a pool (and fortified it) at the foot of the south-west hill at Siloam, if that hill had been left outside Jerusalem for the enemy to occupy it. What fun the Chaldæans would have had in rolling big stones down hill into the water or against a wall so remarkably illplaced!

NOTE ON MIZPEH AND SHEN.

By Lieut.-Colonel Conder, LL.D., R.E.

The site of Mizpeh of Benjamin has long been sought in vain. That it was somewhere near Geba (*Jeb'a*) seems to be indicated by 1 Kings xv, 22, which indicates also a frontier fortress near Ramah (*er Râm*). In Joshua (xviii, 26) it comes next to Beeroth (*Bîreh*). It occurs again with Gibeah and Bethel (Judges xx, 1), the latter being mentioned in verses 26, 31, though not in the authorised version (*see* also xxi, 18), and it was celebrated in connection with Samuel's victory (1 Sam. vii). It was still known in the second century B.C. (1 Macc. iii, 46).

It has never before occurred to me, nor have I seen it suggested by any other writer, that the conspicuous site called *Tell Nasbeh* occupies just the proper position on the watershed south of Bîreh. The change of M into N so often occurs that this name might well represent Mizpeh. The identification leads us to seek for Shen and Ebenezer in the same vicinity; the former may be *Kefr Shiyâu*, a ruin west of Ramallah and east of 'Ain 'Arîk (Archi); and Ebenezer must have been a monument on the highest part of the watershed between these two (*see* 1 Sam. vii, 12).

May 5th, 1898.

HEBREW AND BABYLONIAN POETRY.

By Lieut.-Colonel Conder, LL.D., R.E.

The metre used in Hebrew and Babylonian hymns often resembles closely that of the earlier poems of the Koran, and that of the songs now sung in Arab countries. A fine specimen of such metrical writing occurs in a Babylonian text recently translated by Mr. T. G. Pinches; but I have not seen it noticed that the story is thus given in verse. It may be compared with the metre of the "Blessing of Moses" (Deut. xxxiii, 2–29).

The text in question is one of those which have created interest, because they have been said to refer to Amraphel of Shinar, and his contemporaries Chedorlaomer, Arioch, and Tidal (Gen. xiv, 1), in the time of Abraham. That Amraphel (?Ammuravil) and Arioch (Eriaku) were contemporaries (about 2140 B.C. most probably) has long been known; but there is considerable doubt whether the new texts refer to this period, though they are concerned with an Elamite invasion of Babylon. The name of Chedorlaomer has been supposed to be concealed under the form CUCUCUCUMA, or CUCUCUMA, and that of Arioch under ERIEAKU or ERIECUA. The name of Tidal is said to occur as TUUDKHULA but it is possible that the latter is not a personal name, but a word meaning "revenge" or spite." The texts bear no internal evidence of date, and the theory awaits further confirmation. The first text relates the destruction of Babylon by the Elamites, and the subsequent restoration of a native king. The end of this text may be rendered thus: "CUCUCUMA his son supported his crown in its midst, by the sword of iron. He took vengeance on his foe at will. Wicked kings and sinful princes heaped up evils, so that Marduk King of the Gods was wroth with them . . . . disease fell upon them, a curse surrounded them, (their land) was reduced to ruin. All of them the King our Lord (conquered). Obedient to the wishes of the Gods, Marduk established (him), for His name sake, in Babylon and its Temple. He said: 'Let him return to his place.' May He strengthen his heart. . . . ."

In the second of the new texts a vivid picture is given of the desolation of Babylon, recalling one in the Bible (Isaiah xiii, 21, 22). In this I venture to suggest a few modifications in the translation of the best preserved part of the text:—

"With their kings they (served ?) CUCUCUCUMA King of Elam, he established, he overthrew, among them, as he thought fit: in Babylon, the capital of Chaldea, he exercised rule, taking the city of Marduk King of Gods, he overthrew, he wasted. Packs of dogs chose it as a hiding place. Often they caught the wanderers who went over its ruins. Dragons spitting poison bit the wanderers. Dogs gnawing bones chose the (temple of the) Goddess. Great snakes spitting poison bit those who hid there. What King of Elam ever renewed its temple? The sons of

Babylon did so for their (own) king. It was their work. . . . . So I, a king, a king's son, and son of a king's daughter, have sat on the royal throne. It was (Batmakhanna?) son of Eriecua, who spoiled. . . . . What king was there in ancient times, being proclaimed Lord of Babylon, who did not establish, in the months Cisleu, and Tammuz, in Babylon. . . . ."

Yet another text from Constantinople has been thought to refer to Chedorlaomer (spelt KUTURLAAKHGAMAR); but these signs have no symbol of a proper name, and I would propose a different rendering, as the third syllable in this word is *nu* not *la*, which latter twice occurs in this letter.

1. *Ana Sinidinnam*
2. *Kibe ma*
3. *Umma 'Ammurabima*
4. *Ilātim sa bit muutbalim*
5. *Idlitika*
6. *Um sa kutur nuukh gamar*
7. *Usallama-akku*
8. *Inuma izzānbani ikku*
9. *ina zabim sa GATIka*
10. *Zabam lu pudu ma*
11. *Ilātim*
12. *Ana subti sina*
13. *li sāllimu*

"To Sinidina thus Amraphel has said: All gods of the temple made by your Highness shall give you peace—a day of increase of perfect rest. Lo! they are restored (invited back) by you, by the people of your place. May they redeem that people. May all Gods give peace to their lands."

The text to be more particularly described is a song, recording the invasion of Babylon by Cucucucuma, king of Elam, and the defence of the sanctuary by the gods, who sent an earthquake. The success of the enemy is attributed to the wickedness of the Babylonians. The end of the story is broken, but seems to refer to the punishment of the wicked Viceroy of Elam. The translation is as nearly as possible in the metre of the original, as follows. The lines divide some of the verses into four, six, or eight—that is into couplets. Occasional variations have been made in the translation, which is, however, substantially that given by Mr. Pinches, who states that parts are uncertain in their rendering.

1. Inum rabizu sulum
   idib . . . .
2. Urrida sedu ussu
   sa Bit Sarra . . .
3. Nakru amil Elammatu
   urrikh limni-itu
4. u Bel ana Babili
   usakpidu limutu

1. Lo the Guardian of Salvation
   spake (concerning Babylon)
2. Sending down his cherubim
   who the Temple (guarded)
3. (then) the foe the Elamite
   multiplied transgressions
4. Baal against Babylon
   Had devized (this) evil

5. Inum la sama misari
Izzizzu ma akhitum
6. Sa Bit Sarra Bit Kissati
Ilani urid sedu su
7. Nakru amil Elamatu
Il(e)ki busu su
8. Bel (rabu?) me elisu
Irtasi kimilti

5. Lo! they listened not to justice
Came on them destruction
6. To the house of Hosts (of heaven)
God sent down his cherub
7. (so) the foe the Elamite
Seized on its possessions
8. Baal mightier than he
Granted (it) in anger

9. Inu-um saburu-u

Istanu limnam sun
10. Gullum u imi khullum
upazzikhi limni sun
11. Urridu ma ilanisunu

Urridu ma nakkabbis
12. Mekhie imi limnu
Ilma-a samami-is
13. Ilu Anu patik sunu
Irtasi kimilti
14. unni-is zimi sunu
Unama manzazu
15. Ina nibkhi bit Ilani
Usakhkhi uzurta su
16. . . . . Bit Sarra
Innu-us kigalla

9. Lo! they (therefore) broke in pieces
Doubling their transgressions
10. Whirlwind and an evil storm
Blew upon the wicked
11. This their Gods had sent upon them
Sent it as a deluge
12. Tempest yea an evil storm
Whirling up to heaven
13. Anu who created them
Granted (it) in anger
14. Making pale the faces of them
His abode He ruined
15. And the holy place of Gods
Ruining His (temple) courts
16. (Ruining) the House of Hosts
shaking the foundation

17. . . . . .
Izkur sakhluktu
18. . . . . .
irtasi kimilti
19. (Ikhmat?) unnat Bel Bit Zida
Kharrana Sumer-is
20. Aau Kukukukuma
Episu limnitu
21. Itgamma umman manda
(iz) zakur Bel (Rabu?)
22. unam mamma u (inām) na
Ina akhi sunu

17. . . . . .
He decreed destruction
18. . . . . .
granted (it) in anger
19. Baal of Bethzida sped a people
On the way to Sumer
20. Who was Kukukukuma
That he should do evil?
21 Gathering a mighty host
Baal the strong decreed (it)
22. He wrought ruin He destroyed us
(Being) at their side

23. Inum sa Bit Zida . . .
. . . . . ta su
24. u Il Nebu pakid Kissat
urrid (sedu us) su
25. Saplis ana tiamat
iskun . . . . . .
26. Ibiltutu saki rabti
(s)ikhmut samas (ali?)

23. Lo Bethzida (he deserted)
(Left His habitation)
24. also Nebo Lord of Hosts
Sent adown his cherub.
25. Down along the sea side lands
They encamped (to meet them)
26. Ibiltutu's many chiefs
Shamash sent (to cities)

27. Ibir mati sallati
Irma la subatsu
28. Sa Bit Zida bita kinim
Sukhurur sakki su
29. Nakru amil Elamatu
useuz sindi su
30. Saplis ana dur el mumma
Iskunu pani su
31. Urrid amma kharran daum
matu kharran Meeski is
32. Amil senu Elamatu
unabbil bit makhazu
33. Nuni . . . . .

inari in kakki
34. Sa Ekali kala sunu
[Issa] lul sallat su
35. busu sunu ilki i ma
Utabbala Elamat
36. . . . . malku
ibbutu malki su
37. . . . . .
imlu-u ma matum
38. . . . . .
eli . . . . . .

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39. . . . . .
. . . . . maku
40. . . . . .
. . . . . kurra
41. . . . . .
. . . . . Elamat
42. . . . . .
. . . . . busu su
43. . . . . .
. . . . . zimi sunu
44. . . . . .
amma ukallam San.si
45. . . . . menu
Isnika ana seri
46. Bab Istar issak issukhma
iltadi gisgallinis
47. Kima Urra lagamil
irru-umma TUMAKH is
48. izziz ma ina TUMAKH
ina attal ekali
49. Kasuru amma ci
abli idibbu-ubu
50. ana kalla kurradi su
Usukhmit ma agritu

27. On he went the country spoiling
Settling lands of others
28. In Bethzida's ancient temple
Ruining its enclosure
29. (So) the foeman man of Elam
widened his dominion
30. Down beneath a seaside fortress
They encamped against him
31. But he sent by roads of darkness
On the way to Meshech
32. So the wicked man of Elam
overthrew the fortress
33. (all) the chieftains (of the country)
By the sword he conquered
34. Of the temples all things in them
Spoiling he despoiled
35. Seizing the possessions of them
Bearing off to Elam
36. (In each country that was) taken
they destroyed the rulers
37. . . . . .
Filling all the country
38. . . . . .
. . . . . .

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39. . . . . .
. . . . . .
40. . . . . .
. . . . . Eastward
41. . . . . .
. . . . . to Elam
42. . . . . .
. . . . . Their possessions
43. . . . . .
. . . . . Their faces
44. . . . . .
To the Sun discovered
45. . . . . .
Hurrying to the gates
46. Istar's gate he burst he carried
overthrowing in the shrines
47. Like to Urra without pity
He destroyed with violence
48. He sent forth with violence
to the temple's darknesses
49. In they broke but (seeing) that
(all) the people murmured
50. Unto all his warriors
He despatched this message

51. "Sulah sallat ekali
lika an busu su
52. Sukhkha uzurta sūpri
Sa-a sakki-i su"
53. An assasu ⸗ . . . .
Isnika mat (Elamat)
54. ibut milki . . . .
. . . . makhar su
55. . . . . .
. . . . . bit sarra
56. . . . . .
urrid sedu ussu
57. usakhkhi . . . . . .
Itpalu parsi su
58. Irru-um ma khatmat gigi
Issukhu katimtu
59. Ana Ilu nunu dannu
Nakru isnika limnis
60. Ina pani su ilani
Illabisu nu-uri
61. Kima birka ibrik ma
inu-usu asriti
62. Iplukh ma amil nakru
Ukkisi ramansu
63. Urrid ma nisakka su
Amata ikabbi su
64. . . . . mandi . . . i
Ilani illabis nûri
65. (Kima birka ibrik ma)
Inu-usu asriti
66. ". . . . . nunu dannu
Sukhkhi kitirri su
67. . . . . biti su
tizbat (ali) su"
68. . . . . ul idurma
ul ikhsusu napistum
69. . . . . nunu dannu
ul usakhkhi kitirri su
70. (Amil senu) Elamatu
Izkur matatu
71. Elamatu amil senu
Izkur pa-anis
72. (umma u) sana kattē
Usanna anapaltu
73. u suba(d)is mandi libba
tibbilu an Egali
74. . . . . ; TUMAKH lu
asib ahil nisakku

51. "Spoil the spoils of (all) the temple
Take of its possessions
52. Overthrow its courts Hew down all of its enclosures"
53. He himself (came thither also)
Pressing on from (Elam)
54. Slew the Kings (of Sumer)
(Wasting all) before him
55. . . . . .
. . . . . the temple
56. . . . . .
sending down his cherub
57. He destroyed (the people)
Who His Laws had broken
58. He destroyed the veil of darkness
Bore away the curtain
59. To the God the mighty ruler
Wickedly the foe pressed in
60. (But) before his face the Gods clothed themselves in light
61. As the lightning lightening
(so) they shook the lands
62. Fearing this the enemy
Hid himself (away)
63. Sending down his chieftain there a command he spoke to him
64. (When he heard the people) say
The Gods were clothed in light
65. as the lightning lightening
Shaking all the lands
66. ("Is this God a) mighty ruler?
Take away his crowns
67. (and destroy) his temple
Seize on his abode."
68. (Naught he cared and) nothing fearing
Cared not for his soul
69. (But from God) the mighty ruler none can take his crowns
70. (Though) the sinful man of Elam
Had determined to destroy
71. Man of Elam he the sinner
Had decreed (it) far and wide
72. So once more to work destruction
He repeated what he did
73. Proud of heart destructively
To the temple in they poured
74. (But when doing) violence truly in the shrine the chief remained

75. . . . . u
Itbus amil Kate-e
76. . . . . .
. . . . . amil nisakku
77. . . . . .
. . . . mu um eli su
78. . . . . .
. . . . . idduku.

75. . . . . .
The destroyer (so) He made
76. . . . . .
. . . . . the chieftain
77. . . . . .
. . . . that day upon him
78. . . . . .
. . . . . he was slain.

The comparison of this metre with that of one of the great Hebrew songs may perhaps be illustrated by rendering it into English as follows :—

Yehuah from Sinai came — He arose from Seir for them
He shone forth from Paran's Mount — And He came from many shrines
From his right hand shedding on them — Yea His people loved
And all shrines of His He blessed — Them too walking in Thy way
And receiving Thy commands.
Law was given us by Moses — Heritage of Jacob's race
He was in Yeshuron ruler — Gathering the peoples' chiefs
Joining tribes of Israel
Live shall Reuben and not perish — Nor become a few in number
Hear Yehuah the voice of Judah — And towards his people bring him
With his hands to strive for it — Help against his foes be Thou
Give thy Thummim unto Levi — To thy Holy One thy Urim
Him whom Thou hast tried by trial — Making strive by springs of strife
Saying "Parents I regard not" — And his brethren he disowned
And his sons he did not know
For they guarded Thy commandment — And Thy covenant observed
They shall teach thy word to Jacob — And Thy Law to Israel
Incense they shall put before Thee — On Thine altar sacrifice
Bless O Yehuah his substance — And his handiwork accept
Smite his foemen's loins asunder — And his haters shall not rise
Whom Yehuah loves shall dwell — In reliance upon Him
Sheltered by Him all the day — He betwixt his shoulders dwells.
Blessêd of Yehuah his land — By the gift of Heaven's dew
By the gift of sun-ripe fruit — By the gift of flower months
With choice things of ancient mounts — Gifts of everlasting hills
Gifts of earth and all therein — Grace of Him within the Thorn tree
Be upon the head of Joseph — Head of him his brethren hated.
As the young bull is his pride — As the wild bull's horns his horns
Therewith peoples he shall butt — Thrusting to the ends of earth
These are myriads of Ephraim — These the thousands of Manasseh
Zebulon rejoice to journey — Issachar within thy tents
Peoples of the hills they call — There they offer victims due
So they suck the sea's abundance — Drain the treasures of the shore.
Blest be He who broadens Gad — Like a lion he has dwelt
One that gnaws the arm and skull — Choosing best of lands for him
There a lot the judge set by — But with Israel's chiefs he came
Duty to Yehuah doing — Bidden him by Israel

Dan is a lion whelp
Naphtali be full of grace
Lake and dry land he shall hold.
Blessed among sons is Asher
Let him dip his foot in oil
Iron and bronze are all thy gates
None is like Yeshuron's God
In Thy glory on the clouds
God is refuge from of old
And he drave before thee foes
So dwelt Israel secure
On a land of corn and wine
Happy Israel who is like thee
Shield of their defence
And Thy foemen quail before Thee

Leaping from the softer lands
Of all blessings of Yehuah

Be he favoured of his brethren

All thy days are peace.
Riding heaven in Thy might.

And beneath the eternal arms
He had bidden to destroy
Solely was the eye of Jacob
Yea his heavens drop the dew
People sheltered by Yehuah
is Thy lifted sword
On their idols Thou hast trod

WEYMOUTH, *December 14th*, 1897.

CHURCH PORTALS REMOVED IN THE THIRTEENTH CENTURY.

By PH. J. BALDENSPERGER, Esq.

IT would probably interest most readers of the *Quarterly Statement* to know more about the portals of churches carried away from Palestine by the thirteenth-century Saracens, and perhaps Cairo and Damascus may have the good luck to possess more investigators such as Mr. Hanauer living in the former city.

Sultan El Moazzam of Damascus was the first to inaugurate this policy of carrying away the marble ornamentations of the palaces and churches in Jerusalem. Whilst Damiette was in the hands of King John of Brienne, for fear of the Christians' success, lest they should find a strong city, the Sultan continued the destruction of Jerusalem in A.D. 1220.

Sultan Bibars followed the same policy when, after having taken Jaffa by surprise on March 7th, 1268, he destroyed the town and carried away the church portals to Cairo, lest the Christians settled again here. Antioch was burned by Bibars in May, 1268, and probably nothing was taken.

Laodicea, which surrendered to Calawun of Egypt in 1287, was the only Syrian coast town that remained standing and received garrison. Tripoli was completely destroyed by Calawun on April 27th, 1289, the best material was employed in building the new town.

When Acre fell into El Ashraf's hands on June 17th, 1291, it was also completely destroyed, and the portals carried away to Cairo, as the specimen described by the Rev. J. E. Hanauer in the October, 1897, number shows.

THE CHURCH OF THE HOLY SEPULCHRE AT JERUSALEM ON THE MOSAIC MAP AT MADEBA.

By Pastor C. Mommert, of Schweinitz.

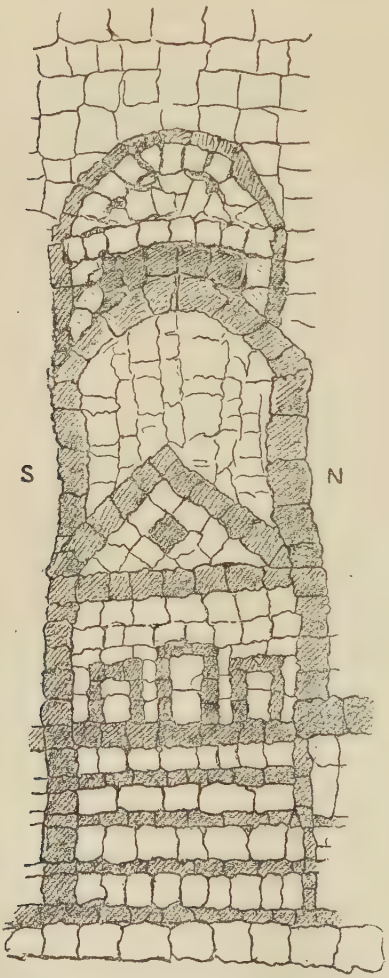
(Translated by permission from the "Mittheilungen und Nachrichten" of the German Palestine Society.)

For the last 20 years I have devoted my attention to the detailed study of the Church of the Holy Sepulchre at Jerusalem, its original plan, and the later and various alterations in its form. The discovery of the mosaic map at Madeba, on which not only the walls, doors, and gates, but also the chief streets and most important buildings of Jerusalem were said to be represented, was accordingly welcomed by me with special delight and a keen expectancy which can easily be understood. I followed all that was written about it with the greatest interest. I soon observed, however, that the various copies of the mosaic which were published up to the end of the year 1897 gave only very inaccurate representations and differed considerably from one another in details. On December 4th of last year I found myself before the mosaic picture in a state of eager expectation. The Church of the Sepulchre is very easy to find, since the mosaic artist, who probably belonged to the age of Justinian (515–565), has accurately indicated the place, which, on the evidence of the old chronicles and its modern situation, clearly belongs to it.

In agreement with the account given by Eusebius (Vita Const. III, 37), the portal of the church with the three entrance gates mentioned by that writer looks towards the east. The open space extending immediately in front of this portal is nothing else than the atrium represented by the same author as lying in an easterly direction in front of the church, and between the latter and the propylæa in the central market street. On the west side, above the roof of the church, may be seen the Anastasis-rotunda with its peculiarly formed cupola.

The outlines of the church building and of the atrium on the east front, as well as those of all the other buildings represented by the artist on the plan of the city of Jerusalem and elsewhere on the historical map, are in thick dark lines, in the restoration of which mosaic stones, partly dark brown or dark violet, partly entirely black, have been employed. In the same manner the outlines of the three entrance gates and other details are preserved in thick dark lines, while, in order to represent the wall surfaces of the portal and the Anastasis-rotunda, together with the cupola, stones of lighter colour were used, white, yellow, grey, sea-green, and light brown, in various gradations of colour, while the surfaces of the roof, like our red tile roofs, are in pink with streaks of carmine. The stone from the neighbouring mountains supplied the material for these colours; the stone cubes of the mosaic are not restored from artificially

coloured glass. As I had no colours with me to take a coloured copy of the basilica, Herr Groth, of Jerusalem, very kindly promised to get me a copy in the exact colours of the original; I accordingly contented myself with sketching, as accurately as possible, the outlines of the basilica and the network of the stones, which form the mosaic representation of the basilica and the atrium situated on the east front, in order to be able to publish them immediately on my return to Europe.



The Holy Sepulchre Church in Jerusalem on the Mosaic Map at Madeba. Drawn on the spot by C. Mommert. (Half the size of the original.)

As a preliminary to this task I took certain measurements of the mosaic representation. I first measured the length of the mosaic representation of the Church of the Sepulchre and its eastern atrium; from the top of the Anastasis-cupola in the west to the market street in the east, including the dark outlines in the east as well as the west, I found the length to be just 21 centimetres. I next measured the individual portions of the building. From west to east, inclusive of the west and east outlines, the atrium measured nearly $5\frac{1}{2}$ centimetres; from north to south, also inclusive of the outlines on each side, exactly 7 centimetres. The height of the portal of the church, inclusive of the upper, but exclusive of the lower outlines, was $7\frac{1}{2}$ centimetres, the width of the portal, inclusive of the outlines on each side, 7 centimetres. The roof, from east to west, inclusive of the west but exclusive of the east outlines, was $4\frac{1}{2}$ centi-

metres long, measured in the centre 6½ centimetres, but on the west side 7 centimetres wide, again inclusive of the outlines on each side. The elevation of the Anastasis-rotunda above the roof of the basilica, inclusive of the upper but exclusive of the lower enclosure, measured exactly 4 centimetres ; the width, inclusive of the outlines on each side, was exactly 6 centimetres, so that the Anastasis-rotunda appears 1 centimetre narrower than the basilica. At the same time I observed that the cupola of the rotunda does not represent a regular semicircle, as might have been assumed from previous drawings of it, but that the upper rim of the cupola terminates in such a manner that we are led to the idea of an open, not a shut cupola, as may be conjectured from Eusebius (Vita Const. III, 35), and which subsequently has been the case in regard to the cupola roof of the Anastasis up to the year 1868, when the modern skylight turret was constructed. I also observed that the cupola rests upon a round, tambour-like substructure, the masonry of which is indicated by the artist by the darker colouring of the mosaic, while he brings the cupola into relief by a lighter tone of colour.

Finally, I took the measurement of the three eastern gates. As these three openings stand on level ground on the atrium, they are gates, not windows, as has frequently been assumed from deficient understanding. The height of the centre gate, inclusive of the upper but exclusive of the lower outline, was just 2 centimetres, while that of the two side doors was only 1½ centimetres. The breadth of the centre door, inclusive of the framework on each side, was 1½ centimetres, that of the two side doors 1¼ centimetres.

I proceeded with the drawing in the following manner :—After the mosaic picture of the basilica had been carefully cleaned I laid some tracing-paper upon it, held it firmly with my left hand, and with my pencil in my right traced the junctures of the individual stones. I lightly shaded the dark stones which form the outlines as well as the packing of the rotunda wall, and left all the remaining stones white, *i.e.*, the white, yellowish, greenish, greyish, and light-brownish, besides the pink and carmine-red stones of the surface of the roof. Where stones were damaged or wanting I indicated the fact by light shading. In this manner I obtained a copy of the basilica, which, as far as the outline is concerned, may fully lay claim to an accurate reproduction of the mosaic picture.

As for the interpretation of the drawing of the church in question, learned men have hitherto been of different opinions—a fact which is easily intelligible if we consider the defective nature of hitherto existing copies. The learned P. M. J. Lagrange writes on this matter in the "Revue Biblique" (Paris, 1897, p. 454) : "There is evidence of a mighty façade with a pointed gable and a red roof. But, observe, three windows, but no entrance. It is a church ; it consequently faces the east and can only show the apse in the direction of the street. It is the Martyrium of Constantine, as reconstructed by Herr Schick from the description of Eusebius and the ancient remains, which are to be seen on the Russian

territory. The red roof is succeeded by a yellow calotte or coping; that must be the Anastasis, the full view of which is concealed by the Martyrium" (*cp.* "Rev. Bibl.," 1895, p. 321). P. Lagrange accordingly seems to regard the drawing as a plan of the Sepulchral Church of Constantine. This interpretation is inadmissible, however, for several reasons. In the first place, Schick's reconstruction of the sepulchral church, on which Lagrange relies, is erroneous; it is neither in agreement with the account of Eusebius, as is erroneously asserted, nor does it harmonise with the remains of the old building excavated on the Russian territory. Eusebius's account is certainly difficult to understand, and anyone who refers to translations is badly advised, for we still lack a good translation of the passages from that author which bear upon the question. The remains of the old building on the Russian territory at Khān-ez-Zēt exhibit, where Schick's reconstruction of the basilica (ZDPV, VIII, Plate XI) assumes a massive, closed wall and several door-bays, one of which is about 8 metres from the south-east corner of the old wall, on which Schick builds up the closed east wall of his basilica. Further support in favour of the future existence of approaches to the holy places on this side and at this place in the old building is found in the fact that on July 31st, 1897, about 14 metres north of the south-east corner of the old wall, a stone belonging to this wall was found, on which was an old Arabic inscription forbidding Christians and Jews the entry to these places which had in the meantime fallen into the hands of the Moslems, which has been exhaustively discussed in the "Mittheilungen und Nachrichten des deutschen Palästina-Vereins" (1897, p. 70, s. 99). It is consequently proved beyond question from the examination of the old remains, as well as from earlier and later information, that the entrances to the Church of the Sepulchre were in ancient times to be found here on its east side. At the same time the representation of the basilica of Constantine on the famous mosaic at Madeba cannot, as P. Lagrange would have it, represent the front of this church and dispense with the entrances.

Others have attempted to find in the Madeba mosaic the ground plan of the basilica, in the empty space of which the artist has indicated the profile of the façade and the view of the roof. But this interpretation also is untenable, however much the actual similarity of the outline of the drawing to the old plan may tempt us to assume it. For, not to mention several other things, there is against this view the fact that the ground plan of the basilica could not come so close to the western city wall as is the case on the mosaic picture.

The drawing in question exhibits neither a vertical nor a ground plan of the old burial-church of Constantine, but simply a view, thrown off in a few thick strokes, of the building and of the atrium on the east front, as it lay before the eyes of the spectator, if he entered the atrium from the east through the propylæa from the market street, or stood upon the flat roof of the eastern vestibule. At his feet was the open court; behind, the eastern façade of the basilica with the three entrance gates mentioned

by Eusebius (Vita Const. III, 37); above, the roof of the basilica; and in the background, the Anastasis-rotunda, with its peculiarly formed dome-shaped roof, open above.

In order to make the picture intelligible, let anyone go to the window or the door of his house, and direct his eyes upon the street or the open space in front of the house, and also upon the house opposite his own. One part, the street or open space, then lies flat in the level; behind rises the façade of the house lying opposite, into which one or more doors lead from the street below. Above the façade of the house, where it is a question of gable roofs, the roof, and behind, perhaps, in the background, another higher building or a tower may be seen. Such is the way in which we must understand the drawing of the basilica on the Madeba mosaic.

If we next consider the atrium or outer court of the east of the basilica, between the latter and the market street, we must not take offence at the fact that the draughtsman conceals much which should have been reproduced here; he does not represent either the halls surrounding the court or the cistern prescribed by ritual, but confines himself to indicating the parti-coloured paving of the court by means of four wider rows of light, and five narrower rows of dark stones. It is inadmissible to consider the alternating dark and light streaks in front of the church as steps ascending to the basilica, since the ascent from the market to the atrium was within the covered propylæa, which the designer has suppressed.

The drawing of the church building is equally simple. A thick black line, formed by a row of very dark stones (which I took to be black, but Groth dark violet), gives the outline of the portal. The church exhibits its east portal, in which the three entrance gates to the basilica, mentioned by Eusebius (Vita Const. III, 37), are brought into view. The antique gable, which crowns the façade, has a gable window in the centre indicated by a quadrangular black mosaic stone, and the cornice, which separates the gable from the lower façade wall, is also represented by a row of small black mosaic stones. The outline of the doors is blackish; but the packing, which, in the case of the centre door, consists of two square-shaped little stones of almost the same size, but, in the case of the side doors, of one complete stone cube and a half cube laid over it, is light yellow. The façade wall is filled in with grey and greenish stones of different tinting, the field of the gable is light yellow—colours which I have left without shading, in contrast to the dark outlines.

The roof of the basilica, set in an exactly similar framework of small dark stones like the façade of the church, is pink-coloured with streaks of carmine red. This appears to have been the conventional roof-colouring for the artist. I have left both tints unshaded. Above the roof, on the north side somewhat in a southerly direction, a dome-shaped building, drawn in a few vigorous outlines, rises prominently. This is the Anastasis rotunda crowned by a cupola open above. We can clearly distinguish the wall of the tambour marked with darker, that is to say, sea-green stones,

from the light yellow roof of the cupola. The latter, however, forms no regular section of a circle, but both the dark lines of the outline as well as the light yellow stones of the packing show above, on both sides, a deviation from the usual cupola form, and represent a dome-shaped roof, which on the summit has an almost flat termination, whereby nothing else seems to be indicated than that this cupola was open above, which is also the case with the decidedly older Pantheon at Rome, as the mention in Eusebius (Vita Const. III, 35) of the space under the open sky round the Holy Sepulchre requires, and as the construction of the dome exhibited it in the Anastasis-rotunda until the year 1868. Consequently, the reader who is so inclined will be in a position to interpret the wonderful old drawing of the Church of the Sepulchre. A few words still remain to be said concerning the scientific importance and the value of this old mosaic representation for the study of the archæology of the church.

Hitherto, it has been disputed by the learned, whether Constantine built one, two, or even three churches upon the place of the death and resurrection of Jesus, and of the Inventio Crucis. A detailed study of the authorities bearing upon this has led me to the conviction that the Constantine structure united in one large building all three sanctuaries—Calvary, the Holy Sepulchre, and the Crypt of the Inventio Crucis. It was, therefore, no small satisfaction to me to find that the mosaic artist of Madeba represents only one imposing building over these holy places.

The notice in Eusebius of the three entrance gates in the eastern façade of the basilica and also of the atrium east of the basilica, in the market between the latter and the propylæa, had been in many ways misunderstood by the learned. The mosaic artist of Madeba, who had the Constantine structure before him, shows the three entrance gates of the basilica in the east front, and in like manner the atrium on its east side. This settles the dispute in regard to the position of the atrium and the entrances to the basilica mentioned by Eusebius.

With regard to the Anastasis-rotunda there have been learned men who held the opinion that Constantine only erected a semicircular building round the Holy Sepulchre, and that it was not until after the destruction of the Constantine structure by the Persians in the year 614, when the buildings were renovated by Modestus (616–626), that the semicircular building was converted into a rotunda. But the mosaic artist of Madeba already denotes this Anastasis as a rotunda.

Eusebius tells us (Vita Const. III, 35) that the space near the Holy Sepulchre was under the open sky. This induced some learned men to assume that a large open court extended between the Holy Sepulchre and the basilica, and that the Anastasis and the basilica were two different buildings. But the mosaic artist of Madeba gives such a form to the cupola of his Anastasis-rotunda that it can only be understood of a cupola open above, after the manner of the Pantheon at Rome, and the traditional (up to the year 1868) open cupola of the Church of the Holy Sepulchre. We consequently get an opening above for the Anastasis of the basilica of

Constantine which is sufficiently attested and affords an explanation of the open space in the Holy Sepulchre. The theory of an atrium between the Anastasis and the basilica consequently falls to the ground.

However, I will not tell tales out of school. A work which I have ready for the press—"The Church of the Holy Sepulchre and its Sanctuaries," which now only requires a publisher—will, it is hoped, soon furnish the reader, who is so inclined, with further details in regard to this interesting subject.

J. H. Freese.

ON THE TEMPERATURE OF THE AIR AT JERUSALEM, FROM CONTINUOUS OBSERVATIONS 1882 TO 1896, AND COMPARISON WITH THE TEMPERATURE OF THE AIR AT SARONA, FROM SIMULTANEOUS OBSERVATIONS 1882 TO 1889.

By James Glaisher, F.R.S.

Jerusalem is situated in latitude 31° 46′ 40″ N. and longitude 35° 13′ 30″ E., and is about 2,500 feet above the level of the Mediterranean Sea. The observations of temperature were began in the year 1861 by Dr. Chaplin, and continued by him till the end of the year 1881. The results of Dr. Chaplin's observations were published in the *Quarterly Statement* for January, 1883.

Under the head of Temperature Dr. Chaplin states that "to carry on a continuous series of meteorological observations in Jerusalem is extremely difficult, owing to the delays and uncertainties involved in replacing broken or defective instruments, and although great and constant care has been taken to make regular observations, it has several times happened that for a long period one or more of the thermometers has been wanting."

Owing to the causes mentioned by Dr. Chaplin, he felt obliged to restrict himself to the observations in only eight years—1864 to 1871—out of the twenty-one. It is greatly to be regretted that the complete record made by so careful an observer as Dr. Chaplin could not have been rendered available; in that case our knowledge of the climate of Jerusalem would have been much greater than it is.

From 1882 the observations have been made under the superintendence of the Palestine Exploration Fund. They were forwarded at the end of each year to the Society, but remained unreduced for some years; recently they have been sent to me at the end of each year. The results from 1882 to 1896 were published in the *Quarterly Statements* between July, 1893, and January, 1898, and this paper is based upon the yearly results published in those years.

At Sarona, in latitude 32° 4′ N. and longitude 34° 47′ E., and about 50 feet above the sea, observations under the superintendence of the Palestine Exploration Fund were made from the year 1880 to the year 1889, and were sent at the end of each year to the Society, but remained, as in the Jerusalem series, unreduced for some years. The results of each year's observations were published in the *Quarterly Statements*, beginning July, 1888, and ending October, 1890. The discussion of the 10 years' results was published in the *Quarterly Statements* for the year 1891. During eight years from 1882, the observations were taken simultaneously with those at Jerusalem, and from 1882 to 1889 the results in several of the tables in the discussion of the Sarona observations are comparable with the discussion of the Jerusalem observations.

By looking over Table I it will be seen that the temperature of the air did not reach 100° in the years 1882, 1883, 1885, 1890, 1891, and 1895, but reached or exceeded 100° in all the other years, viz., 1884, 1886, 1887, 1888, 1889, 1892, 1893, 1894, and 1896. The highest temperature in the 15 years was 108° on June 18th, 1894, and the next in order was 106° on both July 12th and 13th, 1888. The highest temperature observed by Dr. Chaplin during 21 years, viz., 1861 to 1881, was on the 28th and 30th of August, 1881, when it remained for some hours at 112°.

The highest temperature in the year—

1882	was	99°·5	on	August 28th.
1883	,,	98°·5	,,	June 2nd.
1884	,,	105°·0	,,	August 6th and 9th.
1885	,,	98°·0	,,	August 7th.
1886	,,	105°·0	,,	June 15th.
1887	,,	102°·0	,,	August 21st.
1888	,,	106°·0	,,	July 12th and 13th.
1889	,,	100°·5	,,	August 1st.
1890	,,	97°·0	,,	September 10th.
1891	,,	97°·0	,,	June 10th and August 8th.
1892	,,	101°·0	,,	September 17th.
1893	,,	104°·5	,,	July 19th.
1894	,,	108°·0	,,	June 18th.
1895	,,	97°·0	,,	June 14th and September 22nd.
1896	,,	103°·0	,,	August 14th.

Thus the maximum temperature of the year has occurred in—

June, five times, viz., in 1883, 1886, 1891, 1894, and 1895 ; the highest was 108°·0 in 1894.

July, twice, in 1888 and 1893 ; the highest was 106°·0 in 1888.

August, seven times, in 1882, 1884, 1885, 1887, 1889, 1891, and 1896 ; the highest was 105°·0 in 1884.

September, three times, in 1890, 1892, and 1885 ; the highest was 101°·0 in 1892.

In the year 1891 the highest readings in June and August were alike.

,, 1895 ,, ,, June and September ,,

TABLE I.—Showing the highest temperature of the air at Jerusalem in every month.

Months.	YEARS.															Means of 15 years.
	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	
	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.
January... ...	56·5	60·5	62·0	60·0	63·5	62·0	64·8	61·0	54·5	61·0	62·0	65·5	57·0	59·2	57·0	60·4
February ...	70·5	58·5	58·0	69·5	65·5	73·5	73·0	71·5	64·3	60·0	70·0	68·8	62·0	72·8	68·0	67·1
March	75·0	86·0	75·0	84·0	74·0	79·8	90·5	82·5	77·0	85·0	76·0	77·0	78·5	80·5	68·0	79·3
April	78·0	83·0	84·0	87·0	90·2	85·5	86·2	94·8	80·8	86·5	86·0	78·0	84·8	81·2	85·0	84·7
May	90·0	93·5	94·0	96·0	93·0	94·0	91·5	97·0	89·0	89·0	99·5	90·8	95·5	93·8	89·0	92·4
June	93·2	98·5	99·0	93·5	105·0	97·8	93·0	95·5	96·2	97·0	94·5	90·8	108·0	97·0	98·2	97·2
July	89·8	93·5	99·5	91·0	96·0	97·8	106·0	97·8	93·8	95·5	94·5	104·5	104·8	96·5	97·8	97·5
August	99·5	98·0	105·0	98·0	101·0	102·0	97·5	100·5	95·5	97·0	91·0	99·0	96·0	95·8	103·0	98·6
September ...	97·0	94·5	90·3	97·0	96·5	96·5	97·0	93·5	97·0	92·0	101·0	95·5	95·0	97·0	91·8	95·4
October	90·0	96·5	91·5	88·5	88·0	94·0	94·5	92·0	90·0	83·0	89·8	89·0	91·5	85·5	89·0	90·4
November ...	75·5	70·5	72·0	78·0	76·0	82·5	68·5	80·8	82·0	83·0	71·5	77·0	81·0	83·0	77·8	77·5
December ...	70·0	66·0	68·5	69·0	63·5	65·0	64·5	66·0	63·8	71·8	67·0	68·0	66·0	66·5	72·0	67·2
Means ...	82·1	83·5	83·2	84·2	84·4	85·9	85·6	86·0	82·0	83·7	82·8	83·7	85·0	84·3	83·1	84·0

In the year 1884 the temperature reached or exceeded 100° on four days, viz., on August 6th, 7th, 9th, and 10th; in 1886 on five days, June 14th, 15th, and 18th, and on August 14th and 15th; in 1887 on three days, August 16th, 21st, and 22nd; in 1888 on seven days, July 12th, 13th, 14th, 15th, 19th, 20th, and 21st; in 1889 on one day, August 1st; in 1892 on one day, September 17th; in 1893 on one day, July 19th; in 1894 on three days, June 17th and 18th, and July 16th; and in 1896 on three days, August 13th, 14th, and 15th. Thus the temperature has reached or exceeded 100° on 28 days during the 15 years.

It reached or exceeded	90°	in the year	1882	on	28	days.
„	„	90°	„	1883	„	36	„
„	„	90°	„	1884	„	33	„
„	„	90°	„	1885	„	33	„
„	„	90°	„	1886	„	55	„
„	„	90°	„	1887	„	73	„
„	„	90°	„	1888	„	51	„
„	„	90°	„	1889	„	54	„
„	„	90°	„	1890	„	37	„
„	„	90°	„	1891	„	28	„
„	„	90°	„	1892	„	23	„
„	„	90°	„	1893	„	30	„
„	„	90°	„	1894	„	36	„
„	„	90°	„	1895	„	35	„
„	„	90°	„	1896	„	29	„

Or in the 15 years the temperature has reached or exceeded 90° on 581 days.

The number at the foot of each column in Table I shows the mean of each year. The highest was 86°·0 in 1889, and the lowest 82°·0 in 1890.

The numbers in the last column of Table I give the mean of the 15 readings. The highest was 98°·6 in August, and the next in order were 97°·5 in July, and 97°·2 in June; the lowest was 60°·4 in January, and the next in order were 67°·1 in February, and 67°·2 in December. The mean of all was 84°·0.

By taking the difference between the numbers in the above table and those corresponding for Sarona in Table I, published in the *Quarterly Statement* for 1891, p. 164, it will be seen the highest temperature of the air in each month at Sarona was always higher in the months from October to May, with the exception of April 1886, May 1882, May 1886, October 1883, and November 1887, when the temperature at Sarona was 0°·2, 2°·0, 7°·0, 2°·5, and 0°·5 respectively lower than that at Jerusalem, and always lower than the temperature at Jerusalem in the months from June to September, with the exception of June 1886, June 1889, and September 1883, when Sarona was higher by 7°·0, 4°·5, and 11°·5 respectively. Omitting these exceptional cases, it varied in—

October	from	2°·0	higher in	1882	to	10°·5	higher in	1886
November	„	5°·2	„	1889	„	17°·5	„	1882
December	„	7°·0	„	1882	„	17°·5	„	1886
January	„	6°·5	„	1886	„	17°·5	„	1883
February	„	3°·5	„	1885 and 1887	to	16°·5	„	1886
March	„	4°·0	„	1884	„	14°·5	„	1887
April	„	3°·0	„	1885	„	13°·0	„	1888
May	„	3°·0	„	1889	„	7°·0	„	1885
June	„	0°·5	lower in	1885	„	9°·5	lower in	1883
July	„	2°·8	„	1882	„	13°·0	„	1888
August	„	6°·0	„	1883	„	15°·0	„	1884
September	„	2°·5	„	1886	„	7°·0	„	1888

The mean highest temperature for the eight years 1882–1889 was 88°·2 at Sarona and 84°·4 at Jerusalem.

From Table II it will be seen that the temperature was at or below 32°·0 in every year excepting 1885 and 1892.

The lowest temperature in the year—

1882	was	28°·5	in February.
1883	„	31°·0	„ March.
1884	„	28°·5	„ January.
1885	„	34°·5	„ January, March, and December.
1886	„	28°·5	„ March.
1887	„	27°·0	„ January.
1888	„	29°·5	„ December.
1889	„	28°·0	„ December.
1890	„	26°·5	„ January.
1891	„	30°·0	„ February and December.
1892	„	36°·0	„ January and December.
1893	„	27°·5	„ December.
1894	„	27°·0	„ January.
1895	„	30°·0	„ January.
1896	„	28°·0	„ January.

Thus the minimum temperature of the year has occurred in—

January, eight times, viz., in 1884, 1885, 1887, 1890, 1892, 1894, 1895, and 1896; the lowest was 26°·5 in 1890.

February, twice, in 1882 and 1891; the lowest was 28°·5 in 1882.

March, three times, in 1883, 1885, and 1886; the lowest was 28°·5 in 1886.

December, six times, in 1885, 1888, 1889, 1891, 1892, and 1893; the lowest was 27°·5 in 1893.

In the year 1885 the lowest readings in January, March, and December were alike.

TABLE II.—Showing the lowest temperature of the air at Jerusalem in every month.

Months.	YEARS.															Means of 15 years.
	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	
	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.
January... ...	31·0	36·5	28·5	34·5	35·0	27·0	30·0	37·5	26·5	31·5	36·0	30·0	27·0	30·0	28·0	31·3
February ...	28·5	35·5	34·5	38·5	34·0	31·0	38·5	38·0	31·0	30·0	36·5	28·0	28·0	32·0	30·0	32·9
March	38·0	31·0	34·0	34·5	28·5	30·5	37·5	38·0	32·0	32·0	39·0	31·0	31·0	32·5	36·0	33·7
April	38·5	40·0	41·5	41·0	30·0	40·5	40·5	42·0	44·8	43·0	43·0	40·0	37·0	43·5	36·0	40·1
May	40·0	47·5	44·0	48·5	41·0	38·5	48·0	47·0	50·0	49·5	49·0	46·0	40·5	45·0	47·0	45·5
June	48·5	56·0	53·0	51·0	50·0	52·0	53·0	56·0	52·0	52·0	55·0	53·5	51·0	50·0	52·0	52·3
July	58·5	58·0	56·0	58·0	53·0	54·0	58·5	60·0	60·0	61·0	59·0	60·0	51·0	58·5	59·0	57·6
August	60·0	60·5	55·0	58·0	52·5	56·0	58·0	62·0	64·0	62·0	61·5	56·0	55·0	58·0	62·5	58·7
September ...	59·0	59·5	54·5	55·5	52·5	51·0	58·0	54·0	53·0	59·0	60·0	52·0	51·0	50·0	56·0	55·0
October	52·5	54·5	48·0	51·5	41·5	51·0	53·0	42·0	55·0	55·0	51·0	47·0	49·0	45·0	56·0	50·1
November ...	47·5	45·3	41·0	44·0	35·5	38·0	38·5	34·0	44·5	41·0	44·0	45·0	38·0	39·0	47·0	41·5
December ...	40·0	36·0	41·0	34·5	32·0	28·0	29·5	28·0	38·0	30·0	36·0	27·5	29·0	34·5	39·5	33·6
Means... ...	45·2	46·7	44·2	45·8	40·5	41·5	45·3	44·9	45·9	45·5	47·5	43·0	40·6	43·2	45·8	44·4

In the year 1891 the lowest readings in February and December were alike.

In the year 1892 the lowest readings in January and December were alike.

In the year	1882	it was at or below	32° on	7 nights.
	1883	„ „	32° „	1 night.
	1884	„ „	32° „	5 nights.
	1886	„ „	32° „	3 „
	1887	„ „	32° „	11 „
	1888	„ „	32° „	7 „
	1889	„ „	32° „	2 „
	1890	„ „	32° „	18 „
	1891	„ „	32° „	8 „
	1893	„ „	32° „	12 „
	1894	„ „	32° „	24 „
	1895	„ „	32° „	5 „
	1896	„ „	32° „	4 „

The lowest temperature in the 15 years was 26°·5 on January 26th, 1890; and the next in order was 27°·0, which occurred on five different nights, viz., on January 23rd, 26th, and 27th, 1887, and on January 20th and 21st, 1894.

The temperature was	below	40°	in the year	1882 on	46 nights.
„	„	40°	„	1883 „	29 „
„	„	40°	„	1884 „	50 „
„	„	40°	„	1885 „	23 „
„	„	40°	„	1886 „	97 „
„	„	40°	„	1887 „	84 „
„	„	40°	„	1888 „	37 „
„	„	40°	„	1889 „	40 „
„	„	40°	„	1890 „	64 „
„	„	40°	„	1891 „	52 „
„	„	40°	„	1892 „	19 „
„	„	40°	„	1893 „	65 „
„	„	40°	„	1894 „	113 „
„	„	40°	„	1895 „	57 „
„	„	40°	„	1896 „	61 „

Or in the 15 years the temperature on 837 nights has been below 40°.

The number at the foot of each column in Table II shows the mean of each year. The lowest was 40°·5 in 1886, and the highest 47°·5 in 1892.

The numbers in the last column of Table II give the mean of the 15 readings. The lowest was 31°·3 in January, and the next in order were 32°·9 in February and 33°·6 in December; the highest was 58°·7 in August, and the next in order were 57°·6 in July and 55°·0 in September. The mean of all was 44°·4.

By taking the difference between the highest and lowest temperature in each year, the yearly range was—

In 1882	71°·0
1883	67°·5
1884	76°·5
1885	63°·5
1886	76°·5
1887	75°·0
1888	76°·5
1889	71°·5
1890	70°·5
1891	67°·0
1892	65°·0
1893	77°·0
1894	81°·0
1895	67°·0
1896	75°·0

The greatest range, 81°·0, was in 1894, the next in order were 77°·0 in 1893 and 76°·5 in both 1884 and 1888; the smallest was 63°·5 in 1885, and the next in order were 65°·0 in 1892 and 67°·0 in both 1891 and 1895. The mean annual range of the 15 years was 72°·0.

By taking the difference between the numbers in the above table and those corresponding for Sarona in Table III, published in the *Quarterly Statement* for 1891, p. 169, it will be seen that the lowest temperature of the air in each month at Sarona was always higher than that at Jerusalem, with the following exceptions—March 1882, September 1882, September 1883, October 1883, October 1885, November 1882, and December 1884, when the temperature at Sarona was 1°·0, 2°·0, 1°·5, 1°·5, 0°·5, 1°·5, and 3°·0 respectively lower than that at Jerusalem. Omitting these exceptional cases, it varied in—

January	from 2°·5	higher	in 1883	to	8°·0	higher in 1886	
February	„ 3°·0	„	1889	„	9°·0	„	1886
March	„ 2°·5	„	1888	„	10°·5	„	1886
April	„ 0°·0	„	1883	„	12°·0	„	1886
May	„ 0°·5	„	1883	„	7°·0	„	1882 and 1886
June	„ 2°·5	„	1882	„	7°·0	„	1885 and 1886
July	„ 1°·5	„	1882	„	8°·0	„	1885, 1886, and 1887
August	„ 4°·0	„	1882	„	12°·5	„	1886
September	„ 5°·0	„	1888	„	10°·0	„	1887
October	„ 0°·5	„	1882	„	14°·0	„	1889
November	„ 3°·1	„	1888	„	14°·0	„	1887
December	„ 0°·0	„	1882	„	18°·0	„	1887

The mean lowest temperature for the eight years 1882–1889 was 49°·7 at Sarona and 44°·3 at Jerusalem.

TABLE III.—Showing the monthly range of the temperature of the air at Jerusalem in every month.

Months.	YEARS.															Means of 15 years.
	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	
	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.
January ...	25·5	24·0	33·5	25·5	28·5	35·0	34·8	23·5	28·0	29·5	26·0	35·5	30·0	29·2	29·0	29·2
February ...	42·0	23·0	23·5	31·0	31·5	42·5	34·5	33·5	33·8	30·0	33·5	40·8	34·0	40·8	38·0	34·2
March	37·0	55·0	41·0	49·5	45·5	49·3	53·0	44·5	45·0	53·0	37·0	46·0	47·5	48·0	32·0	45·5
April	39·5	43·0	42·5	46·0	60·2	45·0	45·7	52·8	36·0	43·5	43·0	38·0	47·8	37·7	49·0	44·6
May	50·0	46·0	50·0	47·5	52·0	55·5	43·5	50·0	39·0	39·5	41·5	44·8	55·0	48·8	42·0	47·0
June	44·8	42·5	46·0	42·5	55·0	45·8	40·0	39·5	44·2	45·0	39·8	37·3	57·0	47·0	46·2	44·8
July	31·3	38·5	43·5	33·0	43·0	43·8	47·5	37·8	33·8	34·5	35·5	44·5	53·8	38·0	38·8	39·8
August	39·5	37·5	50·0	40·0	48·5	46·0	39·5	38·5	31·5	35·0	29·5	43·0	41·0	37·8	40·5	39·8
September ...	38·0	35·0	35·8	41·5	44·0	45·5	39·0	39·5	44·0	33·0	41·0	43·5	44·0	47·0	35·8	40·4
October	37·5	42·0	43·5	37·0	46·5	43·0	41·5	50·0	35·0	31·0	38·8	42·0	42·5	40·5	33·0	40·3
November ...	28·0	25·2	31·0	34·0	40·5	44·5	30·0	46·8	37·5	42·0	27·5	32·0	43·0	47·0	30·8	36·0
December ...	30·0	30·0	27·5	34·5	31·5	37·0	35·0	38·0	25·8	41·8	31·0	40·5	37·0	32·0	32·5	33·6
Means... ...	36·9	36·8	39·0	38·5	43·8	44·4	40·3	41·1	36·1	38·2	35·3	40·7	44·4	41·1	37·3	39·6

The extreme ranges in each month are as follows :—

In January	the	smallest	was	23°·5	in	1889,	the largest	35°·5	in 1893
February	„	„		23°·0	„	1883	„	42°·5	„ 1887
March	„	„		32°·0	„	1896	„	55°·0	„ 1883
April	„	„		36°·0	„	1890	„	60°·2	„ 1886
May	„	„		39°·0	„	1890	„	55°·5	„ 1887
June	„	„		37°·3	„	1893	„	57°·0	„ 1894
July	„	„		31°·3	„	1882	„	53°·8	„ 1894
August	„	„		29°·5	„	1892	„	50°·0	„ 1884
September	„	„		33°·0	„	1891	„	47°·0	„ 1895
October	„	„		31°·0	„	1891	„	50°·0	„ 1889
November	„	„		25°·2	„	1883	„	47°·0	„ 1895
December	„	„		25°·8	„	1890	„	41°·8	„ 1891

The smallest range in the 15 years in the month was 23°·0 in February, 1883, and the largest 60°·2 in April, 1886.

The number at the foot of each column in Table III shows the mean monthly range of the year, and these numbers varied from 35°·3 in 1892 to 44°·4 in both 1887 and 1894.

The numbers in the last column of Table III give the mean range in each month. The smallest was 29°·2 in January, and the next in order were 33°·6 in December and 34°·2 in February ; the largest was 47°·0 in May, and the next in order were 45°·5 in March and 44°·8 in June. The mean monthly range for the 15 years was 39°·6. From Dr. Chaplin's observations, published in the *Quarterly Statement* for January, 1883, p. 39, the mean monthly range for eight years, viz., 1864 to 1871, was 39°·9.

By taking the difference between the numbers in the above table and those corresponding for Sarona in Table V, published in the *Quarterly Statement* for 1891, p. 174, it will be seen that the monthly range of the temperature of the air at Sarona was always larger than that at Jerusalem in the months from October to April, with the following exceptions—January 1886, February 1887, March 1884, March 1886, April 1885, April 1886, April 1888, October 1883, October 1886, October 1889, November 1886, November 1887, November 1889, and December 1887, when the range at Sarona was smaller by 1°·5, 2°·5, 4°·0, 1°·5, 1°·0, 12°·2, 2°·7, 1°·0, 5°·5, 8°·0, 4°·5, 14°·5, 0°·8, and 7°·0 respectively, and always smaller than the range at Jerusalem in the months from May to September, excepting May 1883, May 1885, May 1888, June 1889, and September 1883, when the range at Sarona was larger by 5°·0, 2°·5, 1°·5, and 13°·0 respectively. Omitting these exceptional cases, it varied in—

October	from	0°·0	larger	in	1887	to 10°·0	larger in	1885
November	„	1°·0	„		1884	„ 19°·0	„	1882
December	„	0°·0	„		1888	„ 16°·5	„	1884
January	„	4°·2	„		1888	„ 15°·0	„	1883
February	„	0°·0	„		1885	„ 8°·0	„	1883
March	„	2°·5	„		1885	„ 9°·5	„	1889
April	„	4°·5	„		1882	„ 12°·0	„	1883

May	from	0°·0	smaller in	1889	to	14°·0	smaller in	1886
June	„	0°·0	„	1886	„	14°·8	„	1887
July	„	4°·3	„	1882	„	18°·5	„	1888
August	„	10°·5	„	1883	„	23°·0	„	1884
September	„	3°·0	„	1882	„	16°·5	„	1887

The mean monthly range for the eight years 1882–1889 was 38°·4 at Sarona and 40°·1 at Jerusalem.

The extreme monthly mean high day temperatures in each month are as follows :—

In January	the lowest was	47°·3	in	1890,	the highest	53°·9	in	1886
February	„	49°·0	„	1882	„	60°·8	„	1895
March	„	58°·0	„	1896	„	67°·2	„	1888
April	„	64°·9	„	1893	„	75°·2	„	1887
May	„	75°·4	„	1882	„	82°·9	„	1885
June	„	82°·2	„	1895	„	88°·6	„	1886
July	„	85°·5	„	1882 and 1883	„	93°·2	„	1888
August	„	86°·7	„	1894	„	93°·8	„	1890
September	„	80°·9	„	1884	„	88°·0	„	1892
October	„	75°·9	„	1895	„	89°·0	„	1887
November	„	56°·9	„	1888	„	71°·2	„	1893
December	„	53°·4	„	1888	„	61°·3	„	1896

Thus the *mean high day temperature* has varied, the most 14°·3 in November, the next in order 13°·1 in October, and 11°·8 in February ; and the least 6°·4 in June, 6°·6 in January, and 7°·5 in May. The lowest in the 15 years was 47°·3 in January, 1890, and the highest 93°·8 in August, 1890.

The highest monthly mean high day temperature in each year has been as follows :—

In 1882	in	August	88°·2
1883	„	August	87°·2
1884	„	August	88°·0
1885	„	August	89°·3
1886	„	August	92°·2
1887	„	August	91°·9
1888	„	July	93°·2
1889	„	August	90°·0
1890	„	August	93°·8
1891	„	August	89°·6
1892	„	September	88°·0
1893	„	July	90°·8
1894	„	June	87°·6
1895	„	July and August	88°·2
1896	„	August	91°·3

TABLE IV.—Showing the monthly mean of the high day temperature of the air at Jerusalem.

Months.	YEARS.															Means of 15 years.
	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	
	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs
January ...	49·8	51·8	49·4	50·8	53·9	50·5	49·7	51·5	47·3	51·2	52·4	52·4	50·5	53·8	49·8	51·0
February ...	49·0	52·0	49·7	56·4	56·5	55·2	57·4	55·7	54·2	50·5	56·7	53·0	52·9	60·8	52·0	54·1
March	63·5	63·5	60·2	64·1	59·5	61·9	67·2	67·1	64·5	63·2	63·3	60·5	61·2	60·3	58·0	62·5
April	68·3	68·9	73·2	66·8	69·5	75·2	70·3	71·6	69·8	72·0	72·4	64·9	66·2	70·8	66·4	69·8
May	75·4	78·4	77·2	82·9	76·4	76·9	75·8	80·4	80·7	80·4	77·5	77·0	79·9	79·8	76·8	78·4
June	82·7	85·0	85·5	82·9	88·6	86·9	83·0	85·2	84·9	86·6	83·9	83·7	87·6	82·2	82·4	84·7
July	85·5	85·5	85·7	85·7	87·1	89·0	93·2	89·3	91·3	86·8	85·6	90·8	87·4	88·2	86·7	87·8
August	88·2	87·2	88·0	89·3	92·2	91·9	89·3	90·0	93·8	89·6	87·1	86·9	86·7	88·2	91·3	89·3
September ...	86·9	86·3	80·9	86·4	87·3	87·0	87·2	81·6	83·5	84·9	88·0	83·5	85·1	83·8	84·5	85·3
October	76·2	79·7	77·9	81·0	81·0	89·0	82·5	81·9	80·5	78·6	82·2	78·2	83·9	75·9	81·0	80·6
November ...	67·0	64·0	64·9	70·3	64·0	70·7	56·9	63·6	67·0	66·3	63·9	71·2	64·1	66·1	67·7	65·9
December ...	58·6	55·0	53·4	58·9	56·3	57·0	53·4	54·6	54·1	55·4	56·0	55·6	55·8	58·1	61·3	56·7
Means... ...	70·9	71·4	70·9	72·9	72·7	74·3	72·2	73·0	72·6	72·1	72·4	71·5	71·8	72·3	71·5	72·2

So that the maximum has been—

Once in June.
Three times in July.
Eleven times in August.
Once in September.

The number at the foot of each column in Table IV shows the mean of each year. The highest was 74°·3 in 1887, and the lowest 70°·9 in both 1882 and 1884.

The numbers in the last column of Table IV give the mean of the 15 readings. The highest was 89°·3 in August, and the next in order 87°·8 in July, and 85°·3 in September; the lowest was 51°·0 in January, and the next in order were 54°·1 in February, and 56°·7 in December. The mean of all was 72°·2.

By taking the difference between the numbers in the above table and those corresponding for Sarona in Table VII, published in the *Quarterly Statement* for 1891, p. 225, it will be seen that the mean high day temperature of the air at Sarona was always higher than that at Jerusalem in the months from September to May, with the exception of May 1882, May 1883, September 1886, September 1887, September 1888, and October 1887, when the mean high day temperature at Sarona was 0°·1, 1°·7, 0°·1, 1°·0, 0°·1, and 0°·8 respectively lower than that at Jerusalem, and always lower than the temperature at Jerusalem in the months from June to August, with the exception of August 1883, which was 1°·0 higher than that at Jerusalem. Omitting these exceptional cases it varied in—

September	from 0°·3	higher	in 1882	to	2°·8	higher	in 1884
October	„ 3°·1	„	1886	„	7°·1	„	1882
November	„ 6°·2	„	1885	„	12°·6	„	1888
December	„ 10°·3	„	1882	„	13°·1	„	1887
January	„ 10°·8	„	1884 and 1886	to	12°·9	„	1887
February	„ 6°·7	„	1882	„	11°·5	„	1889
March	„ 5°·3	„	1882	„	10°·3	„	1888
April	„ 2°·5	„	1889	„	6°·4	„	1885
May	„ 0°·0	„	1884	„	3°·3	„	1887
June	„ 0°·1	lower	in 1885	„	3°·1	lower	in 1882
July	„ 0°·0	„	1885	„	4°·7	„	1888
August	„ 0°·9	„	1888	„	4°·3	„	1886

The mean high day temperature for the eight years 1882–1889 was 76°·7 at Sarona and 72°·3 at Jerusalem.

TABLE V.—Showing the monthly mean of the low night temperature of the air at Jerusalem.

Months.	YEARS.															Means of 15 years.
	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	
	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.
January ..	37·4	42·5	38·0	40·3	39·1	34·5	37·0	41·0	32·3	40·5	41·3	40·6	34·1	36·2	37·9	38·2
February ...	36·1	40·2	38·7	42·5	39·4	40·3	44·1	43·1	36·9	38·2	43·2	39·6	35·7	39·6	38·6	39·7
March	45·4	46·2	43·2	46·7	39·4	42·5	49·8	48·8	46·8	42·3	46·0	41·7	40·1	41·2	42·2	44·2
April	53·3	49·8	53·3	49·1	45·8	50·5	51·6	50·8	52·3	52·7	52·2	46·7	44·0	51·6	49·1	50·2
May	54·0	55·0	55·5	59·9	50·8	52·3	54·5	58·6	57·7	58·7	57·9	55·4	53·4	58·2	57·5	56·0
June	60·6	61·8	62·4	60·5	59·7	59·1	61·0	62·5	63·5	60·2	61·9	67·0	59·2	59·3	61·3	61·3
July	63·5	64·3	61·6	62·6	58·2	62·0	69·0	66·7	68·7	66·0	63·7	67·9	60·1	64·3	65·4	64·3
August	65·3	65·1	63·5	62·3	58·4	61·8	65·0	65·0	68·7	66·9	64·6	61·1	58·9	62·9	69·5	63·9
September ...	65·0	63·2	57·8	60·5	57·4	57·6	62·8	60·6	62·1	62·4	65·9	57·9	56·8	58·6	63·5	60·8
October	56·4	60·2	57·9	57·5	52·5	60·4	63·8	59·5	59·3	59·9	61·9	53·6	54·9	51·9	63·1	58·2
November ...	52·4	51·9	48·7	49·6	42·8	46·6	45·9	44·9	52·9	52·3	51·1	50·2	44·1	46·4	54·0	48·9
December ...	47·2	43·1	46·3	42·6	37·8	37·4	42·4	39·2	44·4	44·4	44·3	39·3	36·7	44·8	49·7	42·6
Means... ...	53·0	53·6	52·2	52·8	48·4	50·4	53·9	53·4	53·8	53·7	54·5	51·8	48·2	51·2	54·3	52·4

The monthly mean low night temperature varied in—

January	from	32°·3	in	1890	to	42°·5	in 1883
February	„	35°·7	„	1894	„	44°·1	„ 1888
March	„	39°·4	„	1886	„	49°·8	„ 1888
April	„	44°·0	„	1894	„	53°·3	„ 1882 and 1884
May	„	50°·8	„	1886	„	59°·9	„ 1885
June	„	59°·1	„	1887	„	67°·0	„ 1893
July	„	58°·2	„	1886	„	69°·0	„ 1888
August	„	58°·4	„	1886	„	69°·5	„ 1896
September	„	56°·8	„	1894	„	65°·9	„ 1892
October	„	51°·9	„	1895	„	63°·8	„ 1888
November	„	42°·8	„	1886	„	54°·0	„ 1896
December	„	36°·7	„	1894	„	49°·7	„ 1896

Thus the mean low night temperature has varied, the most 13°·0 in December, the next in order 11°·9 in October and 11°·2 in November; the least 7°·9 in June, 8°·4 in February, and 9°·1 in both May and September. The lowest mean reading in the 15 years was 32°·3 in January, 1890, and the highest 69°·5 in August, 1896.

The lowest monthly mean low night temperature in each year was as follows :—

In 1882	....	....	....	....	36°·1 in February.
1883	....	....	....	....	40°·2 „ February.
1884	....	....	....	....	38°·0 „ January.
1885	....	....	....	....	40°·3 „ January.
1886	....	....	....	....	37°·8 „ December.
1887	....	....	....	....	34°·5 „ January.
1888	....	....	....	....	37°·0 „ January.
1889	....	....	....	....	39°·2 „ December.
1890	....	....	....	....	32°·3 „ January.
1891	....	....	....	....	38°·2 „ February.
1892	....	....	....	....	41°·3 „ January.
1893	....	....	....	....	39°·3 „ December.
1894	....	....	....	....	34°·1 „ January.
1895	....	....	....	....	36°·2 „ December.
1896	....	....	....	....	37°·9 „ January.

Therefore the lowest monthly mean has occurred—

Eight times in January.
Three times in February.
Four times in December.

The number at the foot of each column in Table V shows the mean o each year. The lowest was 48°·2 in 1894, and the highest 54°·5 in 1892.

The numbers in the last column of Table V give the mean of the 15 readings. The lowest was 38°·2 in January, and the next in order were

39°·7 in February and 42°·6 in December ; the highest was 64°·3 in July, and the next in order were 63°·9 in August and 61°·3 in June. The mean of all 52°·4.

By taking the difference between the numbers in the above table and those corresponding for Sarona in Table IX, published in the *Quarterly Statement* for 1891, p. 230, it will be seen that the mean low night temperature of the air at Sarona was always higher than that at Jerusalem with the exception of April 1882, June 1882, and September 1883, when the mean low night temperature at Sarona was lower by 1°·4, 1°·3, and 2°·2 respectively. Omitting these exceptional cases it varied in—

January	from	2°·9	higher in	1884	to	10°·4	higher in	1887
February	„	3°·1	„	1885	„	9°·3	„	1886
March	„	1°·7	„	1882	„	9°·6	„	1886
April	„	0°·1	„	1884	„	6°·0	„	1886
May	„	0°·1	„	1885	„	5°·2	„	1886
June	„	1°·3	„	1884	„	4°·3	„	1885
July	„	0°·2	„	1888	„	7°·4	„	1886
August	„	3°·4	„	1882	„	10°·8	„	1886
September	„	1°·3	„	1882	„	9°·7	„	1887
October	„	1°·6	„	1883	„	8°·1	„	1886
November	„	2°·6	„	1883	„	10°·6	„	1887
December	„	2°·3	„	1884	„	13°·5	„	1887

The mean low night temperature for the eight years 1882–1889 was 56°·9 at Sarona and 52°·2 at Jerusalem.

The mean daily range has varied—

In January	from	9°·3	in	1883	to	17°·6	in	1895
February	„	11°·0	„	1884	„	21°·2	„	1895
March	„	15°·8	„	1896	„	21°·1	„	1894
April	„	15°·0	„	1882	„	24°·7	„	1887
May	„	19°·3	„	1896	„	26°·5	„	1894
June	„	16°·7	„	1893	„	28°·9	„	1886
July	„	20°·8	„	1891	„	28°·9	„	1886
August	„	21°·8	„	1896	„	33°·8	„	1886
September	„	21°·0	„	1896	„	29°·9	„	1886
October	„	17°·9	„	1896	„	29°·0	„	1894
November	„	11°·0	„	1888	„	24°·1	„	1887
December	„	9°·7	„	1890	„	19°·6	„	1887

The smallest range in the 15 years was 9°·3 in January, 1883, and the largest 33°·8 in August, 1886.

TABLE VI.—Showing the monthly mean daily range of the temperature of the air at Jerusalem.

Months.	YEARS.															Means of 15 years.
	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	
	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.
January... ...	12·4	9·3	11·4	10·5	14·8	16·0	12·7	10·5	15·0	10·7	11·1	11·8	16·4	17·6	11·9	12·8
February ...	12·9	11·8	11·0	13·9	17·1	14·9	13·3	12·6	17·3	12·3	13·5	13·4	17·2	21·2	13·4	14·4
March	18·1	17·3	17·0	17·4	20·1	19·4	17·4	18·3	17·7	20·9	17·3	18·8	21·1	19·1	15·8	18·4
April	15·0	19·1	19·9	17·7	23·7	24·7	18·7	20·8	17·5	19·3	20·2	18·2	22·2	19·2	17·3	19·6
May	21·4	23·4	21·7	23·0	25·6	24·6	21·3	21·8	23·0	21·7	19·6	21·6	26·5	21·6	19·3	22·4
June	22·1	23·2	23·1	22·4	28·9	27·8	22·0	22·7	21·4	26·4	22·0	16·7	28·4	22·9	21·1	23·4
July	22·0	21·2	24·1	23·1	28·9	27·0	24·2	23·1	22·6	20·8	21·9	22·9	27·3	23·9	21·3	23·6
August	22·9	22·1	24·5	27·0	33·8	30·1	24·3	25·0	25·1	22·7	22·5	25·8	27·8	25·3	21·8	25·4
September ...	21·9	23·1	23·1	25·9	29·9	29·4	24·4	24·0	21·4	22·5	22·1	25·6	28·3	25·2	21·0	24·5
October	19·8	19·5	20·6	23·5	28·5	28·6	18·7	22·4	21·2	18·7	20·3	24·6	29·0	24·0	17·9	22·4
November ...	14·6	12·1	16·2	20·7	21·2	24·1	11·0	18·7	14·1	14·0	12·8	21·0	20·0	19·7	13·7	16·9
December ...	11·4	11·9	12·1	16·3	18·5	19·6	11·0	15·4	9·7	11·0	11·7	16·3	19·1	13·3	11·6	13·9
Means... ...	17·9	17·8	18·7	20·1	24·3	23·9	18·3	19·6	18·8	18·4	17·9	19·7	23·6	21·1	17·2	19·8

The greatest monthly mean daily range of temperature in—

1882	was	22°·9	in August.
1883	„	23°·4	„ May.
1884	„	24°·5	„ August.
1885	„	27°·0	„ August.
1886	„	33°·8	„ August.
1887	„	30°·1	„ August.
1888	„	24°·4	„ September.
1889	„	25°·0	„ August.
1890	„	25°·1	„ August.
1891	„	26°·4	„ June.
1892	„	22°·5	„ August.
1893	„	25°·8	„ August.
1894	„	29°·0	„ October.
1895	„	25°·3	„ August.
1896	„	25°·6	„ August.

The greatest monthly range of temperature in the 15 years has occurred—

Once in May.
Once in June.
Eleven times in August.
Once in September.
Once in October.

The number at the foot of each column in Table VI shows the mean of each year. The largest was 24°·3 in 1886, and the smallest 17°·2 in 1896.

The numbers in the last column of Table VI give the mean of the 15 ranges. The smallest, 12°·8, was in January, increasing month by month to the largest, 25°·4, in August, then decreasing month by month to the end of the year. The mean for the 15 years was 19°·8.

From Dr. Chaplin's observations published in the *Quarterly Statement* for January, 1883, p. 39, the mean daily range for the eight years, viz, 1864 to 1871, was 19°·5.

By taking the difference between the numbers in the above table and those corresponding for Sarona in Table XI, published in the *Quarterly Statement* for 1891, p. 235, it will be seen that the mean daily range of temperature of the air at Sarona was always larger in the months from October to April, with the exception of February 1882, March 1886, April 1886, April 1887, October 1885, October 1886, October 1887, November 1886, November 1887, and December 1887, when the mean daily range at Sarona was 1°·2, 1°·4, 2°·5, 0°·4, 1°·2, 5°·0, 4°·2, 0°·9, 3°·5, and 0°·4 respectively smaller than that at Jerusalem; and always smaller than at Jerusalem in the months of May to September, excepting May, 1885, and September, 1883, which were 0°·4 and 4°·6 respectively larger than at Jerusalem. Omitting these exceptional cases it varied in—

October	from	1°·3	larger in	1884	to	2° 9	larger in	1882
November	„	1°·4	„	1889	„	7°·7	„	1883
December	„	1°·7	„	1886	„	10°·2	„	1884

January	from	0°·6	larger in	1886	to	7°·9	larger in	1884
February	„	1°·2	„	1886	„	6°·8	„	1889
March	„	1°·2	„	1885	„	7°·0	„	1888
April	„	1°·2	„	1888	„	5°·9	„	1882
May	„	0°·4	smaller in	1889	„	5°·1	smaller in	1886
June	„	1°·8	„	1882	„	6°·6	„	1887
July	„	3°·1	„	1882	„	8°·5	„	1886
August	„	3°·3	„	1883	„	15°·1	„	1886
September	„	1°·0	„	1882	„	10°·1	„	1887

The mean daily range of temperature for the eight years 1882–1889 was 19°·8 at Sarona and 20°·1 at Jerusalem.

By selecting in each month the lowest and highest numbers in Table VII, the mean temperature has varied—

In January	from	39°·8	in	1890	to	47°·2	in	1883
February	„	42°·5	„	1882	„	50°·2	„	1895
March	„	49°·5	„	1886	„	58°·5	„	1888
April	„	55°·1	„	1894	„	63°·3	„	1884
May	„	63°·6	„	1886	„	71°·4	„	1885
June	„	70°·8	„	1895	„	75°·4	„	1893
July	„	72°·6	„	1886	„	81°·1	„	1888
August	„	72°·8	„	1894	„	81°·2	„	1890
September	„	69°·3	„	1884	„	77°·0	„	1892
October	„	63°·9	„	1895	„	74°·7	„	1887
November	„	51°·4	„	1888	„	60°·8	„	1896
December	„	46°·2	„	1894	„	55°·5	„	1896

The month of the lowest mean temperature in the 15 years was January, 1890, and was 39°·8, the next in order was January, 1894, 42°·3; and the month of the highest was August, 1890, 81°·2, the next in order were July, 1888, 81°·1, and August, 1896, 83°·4.

The months of the lowest and highest mean temperatures in each year are as follows :—

In 1882	the lowest	was	February,	42°·5	; the highest	August,	76°·8
1883	„	„	February,	46°·1	; „	August,	76°·1
1884	„	„	January,	43°·7	; „	August,	75°·8
1885	„	„	January,	45°·5	; „	August,	75°·8
1886	„	„	January,	46°·5	; „	August,	75°·3
1887	„	„	January,	42°·5	; „	August,	76°·8
1888	„	„	January,	43°·4	; „	July,	81°·1
1889	„	„	January,	46°·2	; „	July,	78°·2
1890	„	„	January,	39°·8	; „	August,	81°·2
1891	„	„	February,	44°·4	; „	August,	78°·2
1892	„	„	January,	46°·8	; „	September,	77°·0
1893	„	„	February,	46°·3	; „	July,	79°·3
1894	„	„	January,	42°·3	; „	July,	73°·7
1895	„	„	January,	45°·0	; „	July,	76°·3
1896	„	„	January,	43°·8	; „	August,	80°·4

TABLE VII.—Showing the mean temperature of the air in every month at Jerusalem.

Months.	YEARS.															Means of 15 years.
	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	
	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.
January ...	43·6	47·2	43·7	45·5	46·5	42·5	43·4	46·2	39·8	45·9	46·8	46·5	42·3	45·0	43·8	44·6
February ...	42·5	46·1	44·2	49·5	47·9	47·8	50·7	49·4	45·5	44·4	50·0	46·3	44·3	50·2	45·3	46·9
March	54·4	54·9	51·7	55·4	49·5	52·2	58·5	57·9	55·7	52·7	54·7	51·1	50·6	50·7	50·1	53·3
April	60·8	59·8	63·3	57·5	57·6	62·8	61·0	61·2	61·0	62·4	62·3	55·8	55·1	61·2	57·8	60·0
May	64·7	66·7	66·3	71·4	63·6	64·6	65·1	69·5	69·2	69·5	67·7	66·2	66·7	69·0	67·2	67·2
June	71·7	73·4	73·9	71·7	74·1	73·0	72·0	73·9	74·2	73·4	72·9	75·4	73·4	70·8	71·9	73·0
July	74·5	74·9	73·7	74·1	72·6	75·5	81·1	78·2	80·0	76·4	74·7	79·3	73·7	76·3	76·0	76·1
August	76·8	76·1	75·8	75·8	75·3	76·8	77·2	77·5	81·2	78·2	75·8	74·0	72·8	75·5	80·4	76·6
September ...	76·0	74·8	69·3	73·4	72·3	72·3	75·0	72·6	72·8	73·6	77·0	70·7	71·0	71·2	74·0	73·1
October	66·3	67·0	67·9	69·3	66·8	74·7	73·1	70·7	69·9	69·3	72·0	65·9	69·4	63·9	72·0	69·3
November ...	59·7	58·0	56·8	60·0	53·4	58·6	51·4	54·2	60·0	59·3	57·5	60·7	54·1	56·2	60·8	57·4
December ...	52·9	49·1	52·3	50·7	47·0	47·2	47·9	46·9	49·3	49·9	50·2	47·5	46·2	51·5	55·5	49·7
Means ...	62·0	62·3	61·6	63·0	60·5	62·3	63·0	63·2	63·2	62·9	63·5	61·7	60·0	61·8	62·9	62·3

The month of lowest mean temperature in each year has been—

Eleven times in January.
Four times in February.

The month of the highest mean temperature in each year has been—

Five times in July.
Nine times in August.
Once in September.

The number at the foot of each column in Table VII shows the mean of each year. The lowest was 60·0 in 1894, and the highest 63°·5 in 1892.

The numbers in the last column of Table VII give the mean of the 15 readings. The lowest was 44·6 in January, increasing month by month to the highest, 76°·6, in August, then decreasing month by month to the end of the year.

The three coldest months in the year are January, February, and December, and their mean value is 47°·1.

The month of highest mean temperature is August, and the next in order are July and September, and these are the three hottest months in the year; their mean value is 75°·3.

The mean of the 15 years was 62°·3. From Dr. Chaplin's observations, published in the *Quarterly Statement* for January, 1883, the mean temperature for the eight years, viz., 1864 to 1871, was 62°·8.

By taking the difference between the numbers in the above table and those corresponding for Sarona in Table XIII, published in the *Quarterly Statement* for 1891, p. 303, it will be seen that the mean temperature of the air at Sarona was always higher than that at Jerusalem in every month, with the exception of May 1883, June 1882, June 1883, and July 1888, when the mean temperature at Sarona was 0°·7, 2°·2, 0°·1, and 2°·2 respectively lower than that at Jerusalem. Omitting these exceptional cases, it varied in—

January	from	6°·8	higher in	1884	to 11°·6	higher in	1887
February	„	6°·0	„	1887	„ 9°·9	„	1886
March	„	3°·6	„	1882	„ 8°·8	„	1886
April	„	1°·6	„	1882, 1883, 1889	„ 5°·7	„	1885
May	„	0°·3	„	1885	„ 3°·7	„	1887
June	„	0°·1	„	1884	„ 2°·1	„	1885
July	„	0°·4	„	1882	„ 3°·2	„	1885 & 1886
August	„	0°·8	„	1882	„ 3°·3	„	1886
September	„	0°·4	„	1883	„ 5°·6	„	1889
October	„	1°·3	„	1887	„ 7°·9	„	1889
November	„	5°·2	„	1885	„ 9°·9	„	1888
December	„	7°·0	„	1882	„ 13°·1	„	1887

TABLE VIII.—Showing the departure of the mean temperature of the air in every month above or below its mean for 15 years.

Months.	YEARS.														
	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896
	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.
January	−1·0	+2·6	−0·9	+0·9	+1·9	−2·1	−1·2	+1·6	−4·8	+1·3	+2·2	+1·9	−2·3	+0·4	−0·8
February	−4·4	−0·8	−2·7	+2·6	+1·0	+0·9	+3·8	+2·5	−1·4	−2·5	+3·1	−0·6	−2·6	+3·3	−1·6
March	+1·1	+1·6	−1·6	+2·1	−3·8	−1·1	+5·2	+4·6	+2·4	−0·6	+1·4	−2·2	−2·7	−2·6	−3·2
April	+0·8	−0·2	+3·3	−2·5	−2·4	+2·8	+1·0	+1·2	+1·0	+2·4	+2·3	−4·2	−4·9	+1·2	−2·2
May	−2·5	−0·5	−0·9	+4·2	−3·6	−2·6	−2·1	+2·3	+2·0	+2·3	+0·5	−1·0	−0·5	+1·8	0·0
June	−1·3	+0·4	+0·9	−1·3	+1·1	0·0	−1·0	+0·9	+1·2	+0·4	−0·1	+2·4	+0·4	−2·2	−1·1
July	−1·6	−1·2	−2·4	−2·0	−3·5	−0·6	+5·0	+2·1	+3·9	+0·3	−1·4	+3·2	−2·4	+0·2	−0·1
August	+0·2	−0·5	−0·8	−0·8	−1·3	+0·2	+0·6	+0·9	+4·6	+1·6	−0·8	−2·6	−3·8	−1·1	+3·8
September	+2·9	+1·7	−3·8	+0·3	−0·8	−0·8	+1·9	−0·5	−0·3	+0·5	+3·9	−2·4	−2·1	−1·9	+0·9
October	−3·0	−2·3	−1·4	0·0	−2·5	+5·4	+3·8	+1·4	+0·6	0·0	+2·7	−3·4	+0·1	−5·4	+2·7
November	+2·3	+0·6	−0·6	+2·6	−4·0	+1·2	−6·0	−3·2	+2·6	+1·9	+0·1	+3·3	−3·3	−1·2	+3·4
December	+3·2	−0·6	+2·6	+1·0	−2·7	−2·5	−1·8	−2·8	−0·4	+0·2	+0·5	−2·2	−3·5	+1·8	+5·8
Means...	−0·3	0·0	−0·7	+0·6	−1·7	+0·1	+0·7	+0·9	+0·9	+0·6	+1·2	−0·6	−2·3	−0·5	+0·6

The mean temperature for the eight years 1882–1889 was 66°·6 at Sarona and 62°·2 at Jerusalem.

The greatest departures in each month above or below its mean of 15 years are :—

	Below the mean of 15 years.		Above the mean of 15 years.	
January	4°·8	in 1890 and	2°·6	in 1883
February....	4°·4	„ 1882 „	3°·8	„ 1888
March	3°·8	„ 1886 „	5°·2	„ 1888
April	4°·9	„ 1894 „	3°·3	„ 1884
May	3°·6	„ 1886 „	4°·2	„ 1885
June	2°·2	„ 1895 „	2°·4	„ 1893
July	3°·5	„ 1886 „	5°·0	„ 1888
August	3°·8	„ 1894 „	4°·6	„ 1892
September	3°·8	„ 1884 „	3°·9	„ 1892
October	5°·4	„ 1895 „	5°·4	„ 1887
November	6°·0	„ 1888 „	3°·4	„ 1896
December	3°·5	„ 1894 „	5°·8	„ 1896

The largest departure below the mean was 6°·0 in November, 1888, and the next in order were 5°·4 in October, 1895, and 4°·9 in April, 1894.

The smallest departure below the mean was 2°·2 in June, 1895 ; and the next in order was 3°·5 in both July, 1886, and December, 1894.

The largest departure above the mean was 5°·8 in December, 1896, and the next in order were 5°·4 in October, 1887, and 5°·2 in March, 1888.

The smallest departure above the mean was 2°·4 in June, 1893, and the next in order were 2°·6 in January, 1883, and 3°·3 in April, 1884.

The mean temperature in June was the most uniform, the next in order were January and September, the departure in these months from the mean being, in—

June	2°·2	below to 2°·4	above the mean.
January	4°·8	„ 2°·6	„
September	3°·8	„ 3°·9	„

The mean temperature in October was the most variable, the next in order were November and December. The departure from the mean in these months were, in—

October	5°4	below to 5°·4	above the mean.
November	6°·0	„ 3°·4	„
December	3°·5	„ 5°·8	„

The greatest change of temperature from month to month being from October to November, which is as large as 11°·9, and the next in order 7°·7, from November to December, making a decrease of 19°·6 from October to December.

ERRATUM.

OCTOBER "QUARTERLY STATEMENT," 1897.

List of Donations and Subscriptions.

For "H. C. King, Esq., £1 11*s.* 6*d.*," *read* "H. C. Kay, Esq."

The Amphitheatre, Petra. *(From a Photo by C. A. Hornstein.)*

Ruined Temples, Petra.

Rock-Cut Dwellings, Petra. (*From a Photo by C. A. Ho*[illegible])

KASR PHAR'AUN (PHARAOH'S PALACE). *(From a Photo by C. A. Hornstei*

THE
PALESTINE EXPLORATION FUND.

NOTES AND NEWS.

Dr. Bliss arrived in Jerusalem on August 30, and Mr. Macalister, who replaces Mr. Dickie, on September 2. All has been made ready for commencing the excavations at Tell es Sâfi as soon as the requisite permission from the Sultan reaches Jerusalem. A short report by Dr. Bliss will be found on p. 223.

Mr. R. A. Stewart Macalister, M.A., who has been appointed to succeed Mr. Archibald C. Dickie, is a son of Dr. A. Macalister, the distinguished Professor of Anatomy at Cambridge University. He has already had considerable experience of excavation work in connection with antiquarian investigations, having some years ago been engaged in the excavation of an important early Saxon cemetery discovered in the neighbourhood of Cambridge, and subsequently in an extended archæological survey at Fahan, near Dingle, on the West Coast of Ireland. His monograph on this survey, illustrated by plans, has been published by the Royal Irish Academy. He has recently been preparing a series of drawings for a new edition of the sculptured slabs at Clonmacnoise, King's County, which are to be brought out under the auspices of the Royal Society of Antiquaries of Ireland.

Dr. Bliss's detailed account of his three years' work at Jerusalem is now ready. It is published as a separate volume with the title "Excavations at Jerusalem, 1894–1897," and is copiously illustrated with maps and plans. Price to subscribers to the work of the Fund, 8*s.* 6*d.*, post free.

Reduction in the Price of Maps.—The Committee are pleased to announce that on and after the 1st October there will be a reduction in the price of the Old and New Testament Maps.

The 12-sheet Old and New Testament Map, hitherto supplied at 12*s.* 6*d.*, can now be had for 10*s.* 6*d.* (unmounted), by subscribers to the work of the Fund.

The 20-sheet Old and New Testament Map, hitherto supplied at 23*s.*, can now be had for 17*s.* 6*d.* (unmounted), by subscribers to the work of the Fund.

Notes by Dr. Schick: Last year the store of gunpowder in the castle at Jerusalem was removed from the mosque in which it had been for many years, and was placed in the tower south of David's Tower, on which is the lightning conductor, and the mosque has been cleaned and rendered again available as a place of worship.

In clearing away the earth from the part of the Muristan belonging to the Greeks the apse of a former Church has been found. It is nicely made, and in good preservation. It seems to be Byzantine.

Dr. Schick also reports that in June locusts had appeared, and that provisions were rising in price. He notes that on the Jaffa Road a number of *bicyclists* make their exercises daily—a new thing at Jerusalem.

The office of the Fund is now established in the new premises at 38, Conduit Street (a few doors from Bond Street), where the Museum is open to visitors every week-day from 10 o'clock till 5, except Saturdays, when it is closed at 2 p.m.

The income of the Society, from June 24th to September 22nd, 1898, was—from Legacy left by the late Mr. Henry Smiles, £100; from Annual Subscriptions and Donations, including Local Societies, £318 13*s.* 6*d.*; from Lectures, £30 16*s.* 6*d.*; from sales of publications, &c., £149 3*s.* 6*d.*; total, £598 13*s.* 6*d.* The expenditure during the same period was £689 19*s.* 6*d.* On September 23rd the balance in the Bank was £727 17*s.* 2*d.*

Memo. for Subscribers to the Survey of Palestine.—In the original programme it was intended that the "Archæological Researches" of M. Clermont-Ganneau should be published in one volume, but the work increased so much since its commencement that the Committee found it necessary to arrange for the publication of the whole in two volumes. Vol. II has been published in advance for the reasons stated in the prefatory note.

Vol. I, which treats of Jerusalem and its neighbourhood, is now well forward, and, when ready, will be sent out to the first 250 Subscribers without any increase in their subscriptions for the full set.

The set consists of "The Survey of Eastern Palestine," by Lieut.-Colonel Conder, LL.D., R.E., in one vol.; "The Fauna and Flora of Sinai, Petra,

and the Wâdy 'Arabah," by H. Chichester Hart, B.A., in one vol.; "The Archæological Researches," by Professor Clermont-Ganneau, in two vols. Four volumes in all.

There are only a few copies of the sets left at the price of £7 7*s*.

The price of a complete set of the translations published by the Palestine Pilgrims' Text Society, in 13 volumes, with general index, bound in cloth, is £10 10*s*. A catalogue describing the contents of each volume can be had on application to the Secretary, 38, Conduit Street.

It may be well to mention that plans and photographs alluded to in the reports from Jerusalem and elsewhere cannot all be published, but all are preserved in the office of the Fund, where they may be seen by subscribers.

Branch Associations of the Bible Society, all Sunday Schools within the Sunday School Institute, the Sunday School Union, and the Wesleyan Sunday School Institute, will please observe that by a special Resolution of the Committee they will henceforth be treated as subscribers and be allowed to purchase the books and maps (by application only to the Secretary) at reduced price.

The Committee have to acknowledge with thanks the following donations to the Library of the Fund :—

"Aufschwung der Katholischen Kirche in Jerusalem," &c. By Prälat Dr. Hermann Zschokke, Wien, 1897. From Dr. C. Schick.

"Jerusalem Jahrbuch," 1898. Band V, Heft 1. By A. M. Luncz. From the Author.

"Führer durch die Grabeskirche." By Dr. C. Schick, Jerusalem, 1898. From the Author.

The Committee will be glad to receive donations of Books to the Library of the Fund, which already contains many works of great value relating to Palestine and other Bible Lands. A catalogue of Books in the Library will be found in the July *Quarterly Statement*, 1893.

While desiring to give publicity to proposed identifications and other theories advanced by officers of the Fund and contributors to the pages of the *Quarterly Statement*, the Committee wish it to be distinctly understood that by publishing them in the *Quarterly Statement* they neither sanction nor adopt them.

In order to make up complete sets of the *Quarterly Statement* the Committee will be very glad to receive any of the back numbers.

Subscribers who do not receive the *Quarterly Statement* regularly are asked to send a note to the Acting Secretary. Great care is taken to forward each number to those who are entitled to receive it, but changes of address and other causes occasionally give rise to omissions.

The Committee of the Palestine Exploration Fund desire to make clear that they have no book on their List of Publications called "Picturesque Palestine," nor is any person authorised to represent this book as published by the Society; nor has the Society any book-hawkers in its employment.

Tourists are cordially invited to visit the Loan Collection of "Antiques" in the Jerusalem Association Room of the Palestine Exploration Fund, opposite the Tower of David, Jerusalem. Hours: 8 to 12, and 2 to 6. Maps of Palestine and Palestine Exploration Fund publications are kept for sale.

Photographs of Dr. Schick's models (1) of the Temple of Solomon, (2) of the Herodian Temple, (3) of the Haram Area during the Christian occupation of Jerusalem, and (4) of the Haram Area as it is at present, have been received at the office of the Fund. Sets of these photographs, with an explanation by Dr. Schick, can be purchased by applying to the Secretary, 38, Conduit Street, W.

The authorised lecturers for the Society are—

America.

Professor Theodore F. Wright, Ph.D., 42, Quincy Street, Cambridge, Mass., Honorary General Secretary of the Palestine Exploration Fund for the United States. His subjects are as follows:—

(1) *The Building of Jerusalem.*
(2) *The Overthrow of Jerusalem.*
(3) *The Progress of the Palestine Exploration.*

England.

The Rev. Thomas Harrison, F.R.G.S., The Vicarage, Appledore, Ashford, Kent. His subjects are as follows:—

(1) *Research and Discovery in the Holy Land.*
(2) *Bible Scenes in the Light of Modern Science.*
(3) *The Survey of Eastern Palestine.*
(4) *In the Track of the Israelites from Egypt to Canaan.*
(5) *The Jordan Valley, the Dead Sea, and the Cities of the Plain.*
(6) *The Recovery of Jerusalem*—(*Excavations in* 1894).
(7) *The Recovery of Lachish and the Hebrew Conquest of Palestine.*
(8) *Archæological Illustrations of the Bible.* (Specially adapted for Sunday School Teachers.)

N.B.—All these Lectures are illustrated by specially prepared lantern slides.

The Rev. Charles Harris, M.A., F.R.G.S., Appledore, Ashford, Kent. (All Lectures illustrated by lantern slides.) His subjects are as follows :—

(1) *Modern Discoveries in Palestine.*
(2) *Stories in Stone; or, New Light on the Old Testament.*
(3) *Underground Jerusalem; or, With the Explorer in* 1895.

Bible Stories from the Monuments, or Old Testament History in the Light of Modern Research :—

(4) A. *The Story of Joseph; or, Life in Ancient Egypt.*
(5) B. *The Story of Moses; or, Through the Desert to the Promised Land.*
(6) C. *The Story of Joshua; or, The Buried City of Lachish.*
(7) D. *The Story of Sennacherib; or Scenes of Assyrian Warfare.*
(8) E. *The Story of the Hittites; or, A Lost Nation Found.*

Scotland.

The Rev. James Smith, B.D., F.S.A., F.R.G.S., St. George's-in-the-West Parish, Aberdeen.

His subjects are as follows :—

(1) *The Palestine Exploration Fund.*
(2) *A Pilgrimage to Palestine.*
(3) *Jerusalem—Ancient and Modern.*
(4) *The Temple Area, as it now is.*
(5) *The Church of the Holy Sepulchre.*
(6) *A Visit to Bethlehem and Hebron.*
(7) *Jericho, Jordan, and the Dead Sea.*

The Rev. W. Burnet Thomson, M.A., B.D., Galashiels, N.B. His subjects are as follows :—

(1) *The City of the Great King; or Jerusalem and the Explorer.*
(2) *The Temple, the Sepulchre, and Calvary.*
(3) *Southern Palestine.*
(4) *Jerusalem to Damascus.*
(5) *Palestine and Jesus Christ (for children).*
(6) *The Bible and the Monuments. Discoveries in Ancient Land.*

All illustrated with lantern slides.

Wales.

The Rev. J. Llewelyn Thomas, M.A., Aberpergwm, Glynneath, South Wales. His subjects are as follows :—

(1) *Explorations in Judea.*
(2) *Research and Discovery in Samaria and Galilee.*
(3) *In Bible Lands; a Narrative of Personal Experiences.*
(4) *The Reconstruction of Jerusalem.*
(5) *Problems of Palestine.*

ANNUAL MEETING.

The Annual Meeting of the General Committee of the Palestine Exploration Fund was held at the Office of the Fund, 38, Conduit Street, W., on Tuesday afternoon, July 5th, 1898. Mr. James Glaisher, F.R.S., occupied the chair.

There were present:—Viscount Sidmouth; Admiral Sir Erasmus Ommanney, C.B., F.R.S.; Lord Eustace Cecil; Colonel Goldsmid; Walter Morrison, Esq., M.P.; Colonel Watson, C.M.G., R.E.; Dr. W. Aldis Wright; Dr. Ginsburg; Dr. Chaplin; Professor E. Hull; Dr. Löwy; Henry A. Harper, Esq.; Fred. A. Eaton, Esq.; Basil Woodd Smith, Esq.; J. D. Crace, Esq.; H. C. Kay, Esq.; Dr. F. J. Bliss; and others.

Letters of regret for inability to attend the meeting were presented from the Rev. William Henry Rogers, D.D., Sir Joseph Sebag Montefiore, Mr. D. MacDonald, Professor Flinders Petrie, Canon T. K. Cheyne, Mr. J. Pollard, Mr. James Melrose, the Rev. F. Birch, Mr. F. D. Mocatta, and others.

The Rev. Canon Dalton read the following Report:—

Gentlemen,

In resigning the office to which they were appointed at the last Annual Meeting, your Executive Committee beg to present the following Report:—

They have held twenty-four meetings for the transaction of business.

The lease of the premises at 24, Hanover Square having expired, and the landlord not being desirous of renewing it, new rooms were sought for the Office of the Fund, and after much consideration a commodious suite of rooms at 38, Conduit Street, was secured, to which the Offices, Library, and Museum have been transferred.

A letter, dated June 11th, has been received from Mr. John Dickson, H.B.M. Consul at Jerusalem, stating that he has received a despatch from Her Majesty's Ambassador at Constantinople, requesting him to inform the Committee of the Palestine Exploration Fund that the Iradé sanctioning the excavations which they propose to carry out has been duly communicated, through the Ministry of Public Instruction, to Hamdi Bey.

Arrangements have been made for resuming these important researches, and it is hoped that all interested in the exploration of Palestine will join in supplying the Committee with the needful funds in order that the work may be carried out quickly and efficiently.

After remaining some months in England, and preparing for publication an account of his excavations at Jerusalem, Dr. Bliss proceeded to America, where he has been engaged with success in lecturing on the work of the Fund.

Owing to a disastrous fire at the premises of Messrs. Day and Co., the lithographers, the appearance of Dr. Bliss's book has been unavoidably delayed, but it is confidently hoped that it will be published shortly.

Although the work of excavation has for a time been suspended, the exploration of the antiquities of Palestine has been vigorously carried on by friends of the Fund residing in the country, and several interesting and important discoveries have been made.

Our old and tried colleague, Dr. Conrad Schick, has been indefatigable in noting and reporting new facts brought to light in various ways in connection with the archæology of ancient Jerusalem, and the papers contributed by him to the pages of the *Quarterly Statement* are of great interest. His mature views respecting the Church of the Holy Sepulchre, the result of fifty years' study of the subject on the spot, are of especial value.

The discovery which was made last year of an ancient mosaic map of Palestine on the floor of a ruined church at Madeba has thrown much light upon the geography of the country as understood in the sixth century A.D., and also on the condition of Jerusalem and the Church of the Holy Sepulchre at that period. A learned article on the latter subject, which was contributed by Pastor C. Mommert to the "Mittheilungen und Nachrichten" of the German Palestine Society, has by permission been translated and published in the *Quarterly Statement.*

Another discovery of very great importance is that of a Cufic inscription near the Church of the Holy Sepulchre at Jerusalem, translations and interpretations of which by P. Golubowich, of Jerusalem, and by Dr. Max van Berchem have appeared in the *Quarterly Statement.* With reference to this inscription M. Clermont-Ganneau writes :—"It appears to me to be of the highest importance in connection with the history of the 'Martyrion of Constantine'; it proves that the old wall on the Russian ground east of the Holy Sepulchre is indeed the eastern wall of the martyrion."

As in former years, your Executive Committee have to express their acknowledgments to many scholars and explorers for valuable contributions to the *Quarterly Statements.* Prominent among these is a paper on "The Great Mosque of Damascus," by R. Phenè Spiers, Esq., F.S.A., embodying the careful examinations of the ground in the vicinity by Mr. Archibald C. Dickie, and accompanied by notes made by Captain (now Major-General Sir Charles) Wilson, R.E., in 1865.

Mr. C. A. Hornstein, of Jerusalem, having made a journey to Kerak and Petra, has contributed an account of the same, accompanied by a series of excellent photographs which are in course of publication.

By M. Clermont-Ganneau are a learned paper on "The Taking of Jerusalem by the Persians in A.D. 614," translated from his "Recueil d'Archéologie Orientale," "Notes on the Seal Found on Ophel," "On the Site of the Tombs of the Kings," &c.

Following up his original investigations of last year on "The Length of the Jewish Cubit," Colonel C. M. Watson, R.E., has contributed a carefully worked out paper on "Jewish Measures of Capacity." To the Rev. Dr. J. E. H. Thomson, Professor H. Porter, and Dr. A. S. Murray, the *Statement* has been indebted for copies of and comments on some newly discovered Greek inscriptions. The Rev. J. E. Hanauer has sent articles on "The Skipping of the Mountains," "The Removal of the Portal of a Church at Acre to Cairo," &c., and the Rev. B. Z. Friedman, a note on "The Bridge and Cave of Benât Y'akûb," embodying the curious Mohammedan and Christian local traditions respecting the daughters of the Patriarch Jacob.

Professor Hilprecht has contributed a "Note on Recently Found Nippur Tablets," the Rev. W. F. Birch papers on "The View from Pisgah," "David's Tomb and the Siloam Tunnel," &c., Professor Sayce, Mr. E. J. Pilcher, and Mr. E. Davis have discussed the "Date of the Siloam Inscription," and Mr. William Simpson has sent a suggestion on "The Temple and the Mount of Olives."

To our chairman, Mr. James Glaisher, the Fund has been again indebted for much arduous labour in preparing for publication a further series of meteorological returns from the Observatories of the Fund in Palestine.

The publications of the Fund during the year, besides the *Quarterly Statements*, have been new editions of "Mound of Many Cities," "Judas Maccabæus," and the collotype print of the Raised Map.

Since the last annual meeting 122 names have been added to the list of annual subscribers, and 115 have been lost through death and other causes.

Our cordial thanks are due to the honorary local secretaries for their help so willingly given in collecting and forwarding subscriptions to the office of the Fund.

The total amount of subscriptions and sales of books received in 1897 through Dr. Wright, Honorary General Secretary for the United States of America, was £226 11*s.* 3*d.*

The Committee have to deplore the loss by death since last meeting of the following members of the General Committee :—

Sir P. Le Page Renouf.
Rev. John Stoughton.
Rev. W. F. Creeny.
T. B. Johnston.
F. Waymouth Gibbs.
C. W. M. Van de Velde.
Dean Liddell.
Dean Goulbourn.
Sir James Douglass.

The following is the Treasurer's Statement of Receipts and Expenditure for 1897, which was published in the *Quarterly Statement* for April last :—

TREASURER'S STATEMENT.

The total income of the Fund for the year 1897 was, from Donations and Subscriptions, £2,008 5*s.* 4*d.*; from Legacy by the late Edward Cooper, Esq., £1,000; from Lectures, £65 15*s.* 4*d.*; from sales of publications, £762 9*s.* 6*d.* Total, £3,836 10*s.* 2*d.*

The expenditure on excavations at Jerusalem amounted to £832 15*s.* 8*d.* In June the Firman expired, and the excavations were closed. Immediately thereafter an application was made for permission to dig elsewhere, and the Committee are now waiting for this permission to continue the work.

The amount, £708 19*s.* 1*d.*, spent on printing, binding, &c., is increased this year by the publication of "Latin Kingdom of Jerusalem," "Saladin," and new editions of other works; it also includes the *Quarterly Statement*, which is sent free to every subscriber of 10*s.* 6*d.* and upwards. On the other side the sales of books amounted to £534 2*s.* 11*d.*, showing that there is a steady sale for both old and new books.

On maps, photographs, casts, &c., £391 14*s.* 8*d.* was spent; of this amount £228 6*s.* 7*d.* has been received back.

On advertising, insurance, stationery, &c., the sum of £71 19*s.* 10*d.* was spent.

The postage of books, maps, parcels, including the *Quarterly Statement*, cost £136 7*s.* 5*d.*

The management, including rent of office, museum, &c., amounted to £621 13*s.* 8*d.*

At the end of the year the liabilities were all cleared off. The Society is entirely free of debt, a period unique in the history of the Society since its foundation in 1865.

Assets.	£	*s.*	*d.*	Liabilities.	£	*s.*	*d.*
Balance in Bank, December 31st, 1897	596	14	10	Current Expenses.			
In hand	48	10	4				
	£645	5	2				
Stock of Publications in hand, Surveying Instruments, Show Cases, Furniture, &c.							
In addition there is the valuable library and the unique collection of antiques, models, &c.							

Walter Morrison, *Treasurer.*

The Chairman.—Has any gentleman any remarks to make upon the Report which has just been read?

Professor Hull.—I have the pleasure of moving the adoption of the Report. I do not know that any remarks are necessary, except that of congratulation for the progress that has been made in the work of the Society in Palestine, for the number of publications that have gone forth and have been purchased by the public, for the fact that now we have a clear balance sheet, and also for the pleasure of seeing our chairman in his place, looking so hale and hearty. (Applause.) I think these are all subjects for congratulation, and with these few remarks I beg to move the adoption of the Report.

Admiral Sir Erasmus Ommanney.—I quite agree with everything the last speaker has said, and I have very great pleasure in seconding the adoption of the Report.

The Chairman then put the resolution to the meeting and declared it carried unanimously.

The Chairman.—Usually I have had to speak of the absence of Dr. Bliss in Palestine, but last year we were favoured with his presence, and are now. His experience is of a very unique kind. Mr. Harper told me that when he was at Jerusalem he was shown the excavations, but was told he had to go up to his knees in something worse than water to reach them, so he was contented to remain at the top. But our excavator had to go, whether it was pure or impure; he had to do it, and he did it. He is here to-day. After the close of the excavations he wrote an account of them, which is in course of publication. Since then he has been in America, and I am sure that he will kindly tell us something, as he did last year, with regard to his work.

Dr. Bliss.—As the chairman has just told you, a year ago I had the honour and pleasure of speaking of the excavations at Jerusalem, which had just been closed. I feel as if I had had quite six months of excavations since then, because taking lodgings here in London with Mr. Dickie, who had been with me side by side in the excavations at Jerusalem, we thought the same thoughts and pored over the same maps, worked over the same measurements, and went over the same statistics until I really felt I was conducting excavations in London. Because, of course, the preparation of the book, although based upon the reports in the *Quarterly Statement*, involved a working over of the old material, systematising it, reconsidering conclusions, and putting it into a permanent shape. This work lasted until March 1st, and then with the permission of the Committee I went over to America. The condition was a peculiar one. We had applied for a new permit to excavate, and we did not know at what hour this might be granted. Accordingly I was given permission to go to America subject to instant recall provided I had three weeks there. At the same time it was understood that I was to do as much as I could, by public lectures and otherwise, to interest people in the history and work of the Society. It was rather a case of making bricks without straw. In the first place I was to give lectures, and in the second place, as I was subject to instant recall, I was unable to make engagements

very far ahead. Accordingly, I was not clear to do the best for the Society in interesting people in a practical way, and yet I think, under the circumstances, my efforts were successful. For example, I was given the honour of an invitation to the annual meeting of the American Oriental Society at Hartford, where were gathered together representative Orientalists from America—from the various Universities, and this led to invitations to give lectures at an early date at Yale University, Columbia, Chicago, and at Hartford Theological Seminary. Besides this I lectured at a Jewish College at Philadelphia, at my own Alma Mater, Amherst College, Harvard University, and at various other places, and, gentlemen, I think you would have been gratified to see the great interest that was awakened in our work. I owe a great deal to the cordial co-operation of Professor Wright, our most hard working and conscientious secretary in America. Of course, hearing a voice fresh from the work is different from receiving mere reports, and I think that new interest was stimulated which may bear fruit in the future. Especially at Yale did I receive the most enthusiastic reception. There I had a large audience, mainly composed of students of the college, and besides that there was a large porportion of the citizens of that historical educational centre. The financial aspect, of course, was hampered by the fact that I had always in view this return telegram, and was not free in my movements. But I was able to bring back a considerable amount of money, of which £90 was contributed by three members of the well known family of the Dodges, whose philanthropy is known all over the world, and who have done so much for the East, as is shown by their great contributions to the American College at Beirût, of which my father is President. And I learned one thing, namely, that if ever I was able to return to America for six months unhampered, with a programme that I may have made beforehand, perhaps with the assistance of that great bear-leader, Major Pond, I might be able to come back with several thousand dollars, and having sown seed that would bear fruit in the future. My coming back was most opportune. I had determined to take a certain steamer, and at the last moment I altered it for a quicker steamer, because something told me that I should find this meeting of peculiar interest. The steamer I did not take has not been heard of yet. And I am exceedingly glad that instead of having taken that steamer I took the ss. "Umbria," which brought me here in time to share with you the news that a new firman has been granted for continuing our work in Palestine. A year ago, on June 29th, I made application for this firman. Many people have said to me, "Why have you not received the firman before? It must be that the Turkish Government opposes excavations!" Gentlemen, consider the matter. Turkey has a highly centralised government; everything passes through the Council of State, and must receive the signature of His Majesty the Sultan. You know what the history of Turkey has been during the last year. Important as our excavations appear to us, remember that this is but one of all the thousand details of business that have come

before His Majesty during the year. And it seems to me, when I think of the various documents that must be attended to and signed, that we have no right to feel anything but a sense of congratulation that we have received this permit from that exceedingly busy monarch before the year was complete. A good deal of time was consumed by necessary correspondence, but I am glad to tell you that the questions involving slight difficulties have all been answered satisfactorily, that all the difficulties have been swept away, and it seems to me that, taking into consideration these two things, first the exceedingly busy state of things at Constantinople, and, secondly, the fact that we had to pass carefully and legally through a certain routine, we have got our permit in very good time. Now a word in regard to what we may hope for in the next two years. Our work at Tell el Hesy showed that Palestine is a very important centre, and that a site where the ruins are of mud brick is exceedingly important, because mud brick is a wonderful conservator of antiquities. We have applied for an area including 10 square kilometres, in which area may be found four important sites :—Tell es Sâfi, Tell ej Judeideh, Tell Zakariya, and Khurbet Dhikerîn. All of these sites, with the possible exception of the last, show signs of being Israelitish, or certainly pre-Roman. Tell es Sâfi, you know, was the Blanche Garde of the Crusaders, and therefore we may have to work our way through modern remains before we come to the more ancient site. It is a splendid position. This mound is shaped something like the crescent moon, about 600 yards from tip to tip. It is situated upon lofty white cliffs, 100 feet high, and must always have been an important site. The same may be said of the two other Tells ; and by whomsoever they may have been inhabited, they were certainly exceedingly important. Now Gath has never yet been identified. Those who were interested in the choosing of this site think that Tell es Sâfi may be Gath, from certain considerations which I have not time to enter into now. I go back with a mind so open that I think it is possible that Gath may be either of these three places, and this, instead of being a limitation, is really the contrary, because we have three chances instead of one. You remember that when the first permit was taken out under the present law of excavations, it was because of the sites of Umm Lakis and Khurbet 'Ajlan, which were supposed to be Lachish and Eglon. Within a week Dr. Flinders Petrie proved that neither of these suppositions could be correct. But, owing to the fact that in these 10 square kilometres there were included other sites, Tell el Hesy was attacked, and has been proved, to the satisfaction of most scholars, to be Lachish—in other words, Lachish was sought for in one place and was found at another. So, gentlemen, whether Gath be found at Tell es Sâfi, or at Tell ej Judeideh, or at Tell Zakariya, or at none of these places, yet there is no doubt that they are all ancient sites, in which something of interest will be found. In returning to Palestine, where I hope to break ground by the 1st of September, it will be a great pleasure to me to feel that I have the interest of so many in this country, not only of the general supporters of the Fund, not only of the General

Committee or of the Executive Committee, but that you, Mr. Chairman, will still follow me with interest, and afford me the support which I have so long received.

The Chairman.—Since Dr. Bliss has been in Jerusalem Mr. Harper has been there. Whoever has seen the result of his labours in those beautiful coloured drawings—which I am assured are very correct indeed—would be glad if he would favour us with a few words. Perhaps he may tell you something that will interest you.

Mr. Harper.—Well, Sir, the first thing that occurs to me is that as a Committee we may congratulate ourselves that Dr. Bliss is going out so soon, because I understand that many old ruins are being pulled down in order to make modern improvements. Roads are being made in many parts of the country, and future travellers, and even our friend Dr. Bliss, will, before long, perhaps be able to travel in a dog-cart; he need not ride his horse to the excavations. There will be railways, and he will not be able to tell the Committee anything of his hardships, because everything is being made smooth and easy. Of course, the interest of the country remains the same. But when I look back twenty-eight years, I do not know of any land where the alteration has been so great. It is very fortunate that we began our work so many years ago. We talk in England of the jerry builder, but if you went even as far as Bethlehem and Hebron you would find jerry buildings there also. As for Jerusalem, our friends the Jews are building their new houses there and cutting down olive trees. I had some interesting talks with Dr. Selah Merrill in Jerusalem, who, I hope, will contribute some papers to the Fund, because he is now the United States Consul again, and he takes a deep interest in all matters connected with Jerusalem. As Dr. Bliss knows, the obstacle to excavating in Palestine—I think the truth should be known—is not the Turk. I think Dr. Bliss will bear me out in that. The Turk is a dilatory sort of fellow, but it is other people who are the obstacle. There is always underlying everything a sort of dread of the theological question. The opposition to any excavation work by the people in power arises from their belief that it is not a purely archæological question; they always think we have a theological motive, and you cannot make them understand that all we want is truth. I think that is nearly all I have to say, excepting that I hope Dr. Bliss, in going again, will not have such dirty excavations as he had in some of those places at Jerusalem when I last saw him there.

Dr. Löwy.—Before I speak of matters which interest me personally, and perhaps interest others also, I wish to say that we ought to congratulate ourselves in having Dr. Bliss as one of the great representatives of excavations. We see in his welcome presence a token of peace and union between England and America. It is a very great pleasure to notice that while England is striving to recover the remains of Biblical antiquity, you have an exceptionally gifted American doing the work hand-in-hand with Englishmen. This is a great triumph both for England and America. It is a sign of amity in the region of learning,

and is a great advantage to the present time and to the time coming. I have listened to many new pieces of information which must be welcome to all of us. But there is one thing to which I wish to advert more particularly. It seems that there are three competitors for the name of Gath. The word Gath means a "wine-press," consequently, there must have been vineyards in the neighbourhood. Now the question is—I put it merely as a question—whether those three competing localities are at the same time wine-growing places. Of course, where there are several places containing vineyards we cannot decide which is the real Gath. I most cordially sympathise with removing the veil, or rather the dust, which covers monuments of bygone ages. Such men as Dr. Bliss, and a few others, while they have been excavating and bringing to light ancient cities, or portions of them, have also brought to light most important inscriptions, which tell us a great deal of the history of former days, I mean days of the period which takes its date from the early times of the Bible. We have, on the whole, very few such relics, and every one of them is exceedingly precious. I would suggest that whilst we are most grateful to those explorers who open the ground of buried sites, fuller attention should be given by the Exploration Fund to certain things which are not buried in the ground, but which are buried in the memories of the native population. I mean, that you should gather the folk-lore of Palestine from the survivors of the ancient races which occupied Palestine and Syria. It is true I have seen in the various *Quarterly Statements* some exceedingly interesting notices of this kind, but these come in very casually. It would be a very interesting work if you had a systematic survey of the remembrances of customs, and whatever else is handed down by the peasants of Palestine, of the Lebanon, and of adjacent parts. In these traditional records there is a fund of history which hitherto has not been systematised and carefully collected. I venture to suggest that the Committee, which is so ably working, should also direct their attention to the preservation of surviving folk-lore. You would have the additional advantage of attracting to your great undertaking a large number of the general public, who, at the present time, are not so much interested as they ought to be. And whilst I speak of the general public I beg leave to make a digression: it would have been an advantage to our meeting if, instead of its being held in this room, a larger place had been taken. A goodly number of ladies and gentlemen might then have been invited and would have been made acquainted with the Palestine Exploration Fund. Now I come to a point which, though connected with my personal history, may serve as a stimulus to those who are able to make researches in Palestine. It is about twenty-five years ago that I had occasion to catalogue the late Lord Crawford's Samaritan manuscripts. At that time I was exceedingly interested in the condition of the modern Samaritans, who, as everybody knows, are now dying out. I believe that there are only about one hundred and twenty men left.

In regard to births the proportion is one girl to six boys. They do not intermarry with the Mohammedans, for they detest them; they do not intermarry with the Jews, for they avoid them; they do not even intermarry with the Christians, for there is no communication between them. The Samaritans two hundred years ago used to come from Gaza and from Damascus, and from some other places in Palestine, to visit Nâblus, and perform a sacred service, namely, to read the entire Pentateuch, from the scroll which was supposed to be written outside the Tabernacle of Moses. In Gaza, I believe, they were forcibly converted to Islam. Traditions about the Samaritans may still be lingering in Gaza and in Damascus. I therefore entreat the working representatives of our Society to collect any surviving traditions concerning the Samaritans and to embody their communications in the pages of the excellent *Quarterly Statement*.

The Chairman.—I might just mention, with regard to the remarks of Dr. Löwy about the Samaritans, that we had a series of questions drawn up, and got information upon the folk-lore of the Samaritans, and all those particulars the last speaker mentioned, and the whole series was printed.

Mr. Walter Morrison.—Might I mention that at the start of the Palestine Exploration Fund the collection of folk-lore was one of the first objects put into the prospectus? And I think from time to time we have found much folk-lore, but it is not collected. What we want is to get something published like Lane's "Modern Egyptians."

The Chairman.—I beg to move that the following gentlemen be elected as additional members of the General Committee:—The Bishop of London, John M. Cook, Esq., Professor Mahaffy, and Dr. Selah Merrill. (Carried.)

The Chairman.—The next business is the election of the Executive Committee. I may as well say that we wish to add to the Committee the names of the Rev. Herbert Ryle, D.D., President of Queen's College, Cambridge, and the Rev. Professor George Adam Smith.

Colonel Goldsmid.—I have much pleasure, Sir, in proposing the re-election of the Executive Committee, with the addition of those gentlemen you have mentioned. If I may be allowed to say one word on what my friend remarked about the Jews cutting down the olive trees, I think it is only in fairness to the Jews I should say that to them we owe the planting of an enormous number of olive trees, mulberry trees, and fruit trees of every description. I was there in 1883, and after my visit, seeing that they were at their last gasp and almost at starvation point, I went and saw Baron Rothschild, and I begged him to send help and assistance. He did so, and where there were three starving colonies then, there are twenty more or less flourishing now. The export of wine from these colonies is enormous. The difficulty that Baron Rothschild had was to find markets for the wine. Some was sent to the

Berlin Exhibition, and it had a great sale there. I assisted a few gentlemen in starting in London a depôt for the sale of these wines. Another thing is, I think that this Palestine Exploration Fund will, some 2,000 years hence, owe a debt of gratitude to the Maccabeans. You may have heard of them in London. We had a meeting last Sunday, and we agreed that a monument should be erected to the memory of Judas Maccabeus in Palestine. Two thousand years hence, when you are digging there you may find it, and it may afford a subject of much debate to decide whether it belonged to Judas Maccabeus or to anyone else.

Professor Hull.—I beg to second the re-election of the Executive Committee. (Carried unanimously.)

The Chairman.—There remains for me but a pleasant task, and that is to ask you to thank those who have worked so well for us. First and foremost there is Dr. Bliss, who did his best, I believe, in every respect, and although this *débris* at the bottom of the valley did not please Mr. Harper, Dr. Bliss took no notice of it, and he did well. There is Sir Walter Besant—I wish he were here—but he has attacked too heavy a task for him to have much leisure. I am thankful for the little time that he can spare us. His love for Palestine is none the less than when he was here so constantly with us. To these gentlemen, and to our valued and indefatigable Acting Secretary, I ask you to give your best thanks. (Carried unanimously.)

The Chairman.—There is one other vote. Our Treasurer was absent one year and I had to go through the auditing of that year, and I was told that Mr. Morrison had done that every year since he had been Treasurer. It was a heavy bit of work, a very heavy bit of work. It must not be supposed that our Treasurer merely receives the money with one hand and signs cheques with the other; but he goes through all the accounts, and if there is a penny wrong he will find it out. I would ask you therefore to thank him as warmly as he deserves for the valuable help he has afforded. (Carried unanimously.)

The Treasurer.—Mr. Chairman and gentlemen, I never expected this compliment. I was one of the original founders of this Society, and it has been a labour of love to me to work for it. I have been Treasurer during nearly the whole period of its existence. And auditing the accounts is one of the necessary duties of a Treasurer.

The Chairman.—That concludes the business of the meeting.

Mr. Henry A. Harper.—I think we ought not to separate to-day without giving an unanimous vote of thanks to our Chairman. I was starting for Palestine when that testimonial was being presented, and I very much regret that I was unable to be present. I think it is only due, and I may say it is what we all feel, that our very best thanks are due to him. How he keeps up his interest is a splendid example to us.

I only wonder he does not now go out and see the land for himself. There are a lot of us who would take him if he would only go. I beg, gentlemen, to propose the thanks of the Committee to our Chairman.

Mr. Basil Woodd Smith.—I beg to second that resolution. I am sure everyone who has the privilege of working with Mr. Glaisher is astonished at his energy and perpetual freshness. He is a lesson and a model to us who are many years younger than himself. We return him our most hearty thanks. (Cheers.)

The Chairman.—I thank you very much indeed for the kind words you have spoken. I have done the best I can ; I wish I could do more. It is a most tempting invitation to me to go to Palestine, but with my failing legs I dare not think of it. I totter about ; but, fortunately, my trouble is all in the lower limbs, and it leaves me with that energy which I wish may continue for some time. I beg to thank every member of the Committee for the honour they did me in presenting me with that testimonial. I thank you all. It is a kindness which has given to me an intensity of pleasure. I quite agree with you in being glad that Dr. Bliss is going out so soon. At all events where he is going it will be away from the jerry builder ; and I hope that this time next year he may have much to tell us of the results of his labours. I thank you.

The proceedings then terminated.

REPORT BY F. J. BLISS, Ph.D.

I had hoped that this *Statement* would contain a preliminary report from me, dated from the Camp, announcing the commencement of the excavations. The permit authorising us to dig at Khŭrbet Judeiyideh and environs was issued some weeks ago, but, owing to the going astray of a letter requesting me to comply with a final formality, I did not find the permit awaiting me here on my arrival on August 30th. It has taken some time to set the matter right, but I hope that we shall be able to be on the ground next week. The three chief ruins of interest included in the permit occur at the three angles of a triangle. At the southern apex of the triangle we find Khŭrbet Judeiyideh and the *tell* of the same name two miles north-east of Beit Jibrîn. The *tell* is a large natural hill, with sides artificially scarped. The top is fairly level, and at one end occurs a large mound of *débris*. The visit made by me to the district in June, 1897, was a brief one, but it struck me at the time that the whole hill had been fortified, with important buildings at one end. The site is a splendid one. Six miles to the north-west of this *tell* is Tell es Sâfi, the summit being about 600 feet above sea-level. The *tell* is long and narrow, not unlike a crescent moon in shape. The length, north and south, is about 550 paces. Blanche Garde, the fortress of

the Crusaders, once stood on the southern end, from which the top gently inclines to the north. In the centre of the *tell* is the modern village, about 220 paces in length. To the east are white cliffs, and on all sides the land slopes rapidly. In 1890 Dr. Flinders Petrie visited the place, and found Jewish and Amorite pottery, unmixed with other styles, to within at least 30 feet of the top. On a straight line connecting Ascalon with Jerusalem, Tell es Sâfi will be found to lie about 19 miles from the former and 23 from the latter. Five miles almost directly east from Tell es Sâfi lies Tell Zakarîya, a hill over 1,200 feet above sea-level, resembling Tell Judeiyideh in many particulars. For sanitary reasons we shall probably pitch our first camp near this spot. On the lines connecting Tell Judeiyideh with the two other *tells* are minor ruins which deserve examination.

The chief subject of interest at present is, of course, the coming visit of the German Emperor. A carriage road has been constructed to the Mount of Olives *viâ* Scopus. Roads both inside and outside the city have been repaired. The angle in the Joppa Gate has always rendered the entrance of carriages difficult, and now a new entrance is to be effected by tearing down the wall thrown across the moat from the gate to the citadel, by filling up the moat, and by removing some small shops. Mr. Macalister arrived in good health on September 2nd, and we look forward to a season of great interest.

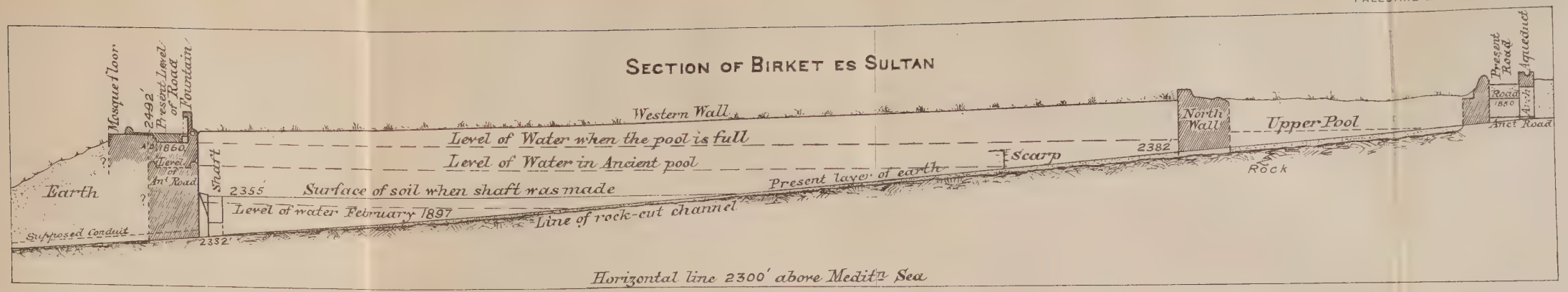
Jerusalem, *September 12th*, 1898.

BIRKET ES SULTAN, JERUSALEM.

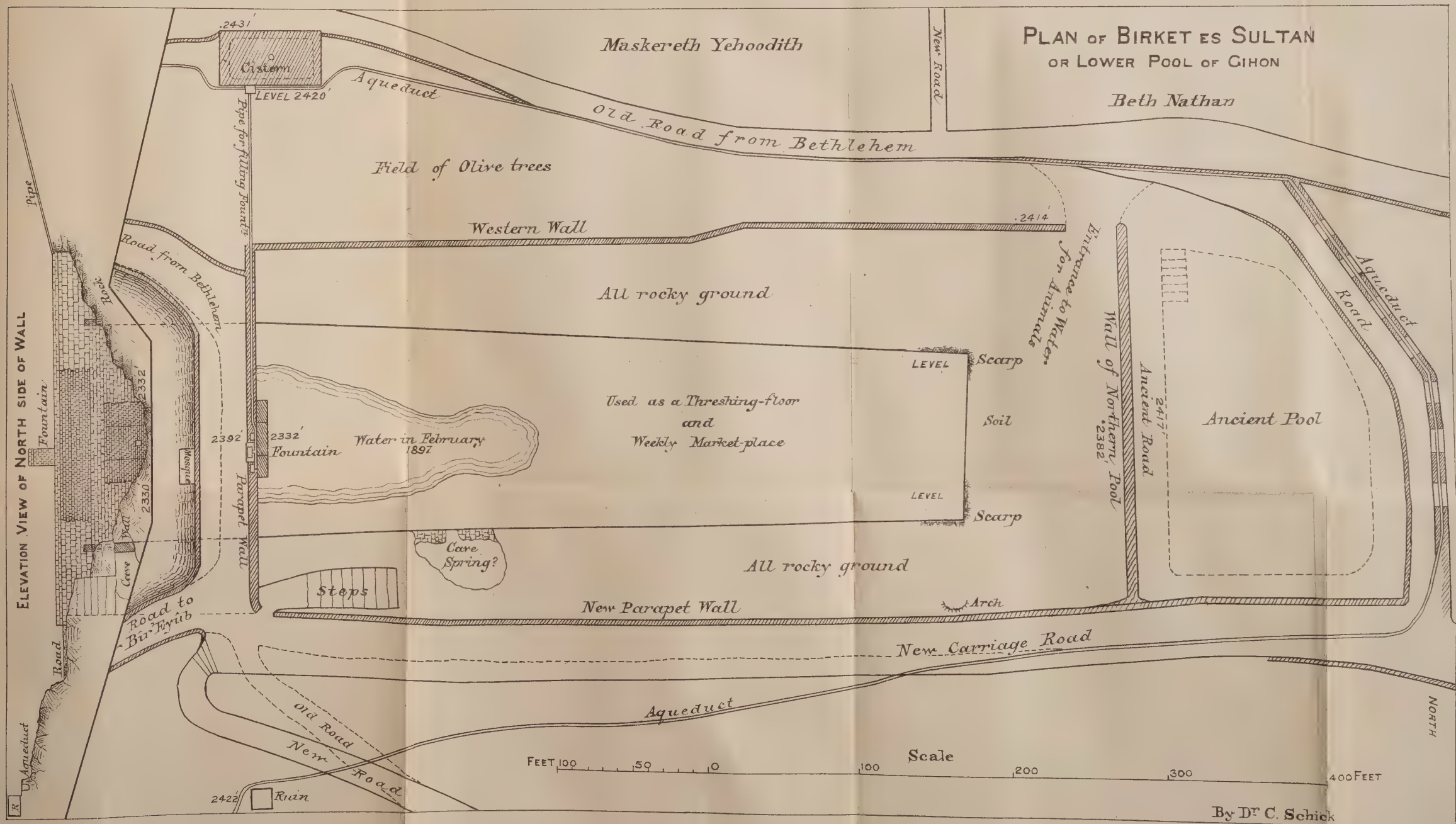
By Dr. Conrad Schick.

1. There are several large reservoirs or pools for gathering water at Jerusalem, of which Birket es Sultan is the largest. It is situated in the western valley, opposite the south-east corner of the city wall and 335 feet distant west of it. As it is described in the Jerusalem volume of "The Memoirs," p. 376, mentioned in the modern guide books, and seen by every traveller or pilgrim, it is not necessary for me to give a long description; it will be sufficient to say that it is 588 feet long, and on an average 265 feet wide, an area of 155,820 square feet, and constructed in a very simple manner by two walls being built across the valley—the lower one, on account of the descent of the valley, being much higher than the upper, at the same time also much thicker and stronger, and supported by a mound of earth. The thickness of neither of these walls has yet been ascertained, but that of the lower will very likely be the same as that at the old Pool of Siloam, about 28 feet, against which is put a mound of earth, as at all pools

SECTION OF BIRKET ES SULTAN



PLAN OF BIRKET ES SULTAN
OR LOWER POOL OF GIHON



By Dr C. Schick

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of such construction. The Bethlehem carriage road now goes over it, crossing the valley at a level of 2,392 feet above the sea; for when the road was improved some years ago it was made 2 feet higher. At the inside the bottom of the pool is at a level of 2,332 feet, the wall, therefore, being 60 feet high. The road was made at the same time also much wider, as is shown in the plan, so that the little building, which was once a mosque, nearly disappeared, also the troughs opposite on the northern side of the road, where there was once a fountain, came lower than the ground. According to the inscription in the recess of the little Saracenic fountain building, it was made about A.D. 1520, a branch of the aqueduct bringing the water there for the use of the passers by and those wishing to pray in the mosque.

When the Ordnance Survey map $\frac{1}{2500}$ was made in 1864–65 the bottom of the pool was at the level of 2,355 feet. How deep down the rock would be found was not known, as there was apparently a great accumulation of earth, and as all such pools have an outlet near the bottom it was supposed that this pool must also have one but choked up by earth. Generally, a passage or stair in the mound or the thickness of the wall leads down to such an outlet, so as to enable the outflow of water to be regulated when necessary. I supposed this was the case here, and in order to find it out I made, about 15 years ago, some excavations, namely, a shaft at the inside of the wall in the centre of the pool, but at about 14 feet deep there came out from the earth so much water that we could not go further. For several weeks people fetched water from there, and afterwards, during several years, the earth which was good for building and other purposes, as being pure and having no stones in it, was carried away, so that the bottom of the pool became there much lower, and every year since some water has collected. In 1896 and 1897 there was a great quantity, and when I visited the place in February, 1897, fellahîn were bathing and swimming there, as they did also the year before, when a few were drowned. By all this the outlet has hitherto not appeared; there is still too much earth there. Yet there are several other things which have attracted my attention and lead me to report on this pool. When making the shaft I found that at a later period, in the centre of the pool, another wall of 50 feet long and 8 feet thick was built before the old and high (lower) wall abutting or leaning upon it, so as to strengthen it. In the middle of it, for a length of 22 feet, it is sloping, whereas both the ends are perpendicular so that they look like piers. This masonry is carried up for 30 feet, and built of small hewn stones, whereas the old wall has larger and worn-out stones. Such I could also see higher up, as in recent years the last remains of the cement have fallen down, so that every stone of the wall can be seen. Accordingly I give in the elevation section, east to west, a view of the north side or face of this wall. It will be seen that higher up the middle part, for 100 feet long and about 20 feet high, there are also small hewn stones, indicating that this part of the wall had once fallen down and been restored with smaller stones. To the right and to the left are larger

stones, worn, but not so much so as those lower down, which also are slightly smaller. The uppermost layers look more modern, so one can easily detect three or four different periods of building, which explain to some degree the history of the pool.

On examining the bottom of the pool, which is rock, and both sides of the valley one detects, about 100 feet south of the present north wall, rock-cut scarps on both sides as if the pool originally extended only to there, and as to these scarps there are corners showing the width of the original pool (as shown in the Plan), which was then 480 feet long and on an average 130 feet wide, making an area of 62,400 square feet, about the same size as Birket Mamilla, which is 316 feet long and 200 feet wide, making an area of 63,200 feet.[1] At that time the southern wall of Birket es Sultan was 16 feet lower,[2] as indicated by the condition of the stones already referred to, and further proved by the lines of the roads. For on the eastern side of the then smaller pool ran down a road, turning at the end of the pool to the right and going over the wall westwards, and also straight on down the valley towards Bir Eyûb, having on the east side a rock scarp where stone steps led up to the road, which ascends the eastern hill (*see* Plan). When afterwards the pool was made larger the rock steps led down into the new part of the pool, and the road had to be brought more to the east and higher up on the slope of the hill, hence the curious corner, &c., at the south-east of the present pool (*see* Ordnance Survey plan $\frac{1}{2500}$).

2. *A Second Pool.*—A glance at the long section (north--south) will show that the water of the enlarged pool, if it were quite full, would come up to the highest possible point at the level of the road, running over the south wall and mound, 60 feet high, whilst at the north wall it would be only about 10 feet high. The wall there being about 36 feet high, the upper 26 of it are not needed for the pool, hence there must have been some other reason for carrying it up so high, and it seems to me clear that this wall formed at the same time the lower wall of another pool, situated higher up the valley, as shown in the section and in the plan by dotted lines. Being not so deep as the larger or southern one its breadth must have also been diminished. In heavy rain the surface water would come first into this smaller pool, as the *musfaih* or filter, before it ran over to the large pool. The rainwater from the surface of fields always carries with it some earth, and is not clean but muddy ; coming into the *musfaih* the particles of earth sink to the bottom, and the clean water on the surface runs then over to the real reservoir. Such a filter pool must be cleared from time to time, and if this is not done it becomes gradually full of earth, and so it is here.

That such an upper pool was once here Rabbi Schwarz states in his book.[3] Now there are flourishing some trees there. But not only is this

[1] Two and a half times smaller than now.

[2] The level of the water when the pool was full required no greater height.

[3] Schwarz, "Das Heilige Land," Frankfurt a. M., 1852, p. 229; *see also* Tobler, "Topographie von Jerusalem," ii, Berlin, 1854, p. 71.

pool now full of earth, but the ground also in its neighbourhood has become higher and higher. Fifty years ago the wall, with the many arches bearing the pipes of the aqueduct coming from Solomon's Pool and going to the Temple area, was more than the height of a man (13 feet high in the middle), and all the arches, nine in number, open; but now they are all shut up, the wall only looking a few feet out from the ground. The next generation will no more understand how their fathers and grandfathers could here speak of a bridge.

On examining the bottom of the large pool, I found that towards the south-eastern corner there has been a cave, the greatest part of the roof of which is now fallen in. This cave was towards the original pool closed up with a thick wall, the remains of which are still there. It may be that a little spring ran out from the cave in ancient times, when the eastern hills were not so much covered with rubbish, in which the rain-water is now taken and absorbed. Such springs are often found in this country, even in the neighbourhood of Jerusalem, running in the rainy season, and drying up sooner or later in summer. If really such a spring was here, it would be the "Dragon Well"[1] (Neh. ii, 13), which would have been the reason for building such a pool here, as was done at Bethel, the lower of the three "Solomon's Pools," and several others in this country.

In enlarging the original pool the side-walls had to be removed and put on either side higher up on the slope, but as the whole ground rises towards the north, the new side-walls would naturally become lower and lower at that end, and become even with the surface of the ground before reaching the north wall; but as a parapet was needed, the walls were carried on except at the north-western corner, where a space 30 feet long was left open as an entrance, where animals from the western main road might go down by the slope into the pool and to the water, at whatever level it was standing.

3. *History of the Pool.*—In the Bible, especially in the Old Testament, pools are often mentioned in connection with Jerusalem, but, except in the case of Siloah, their locality is not stated. In 2 Kings xviii, 17, and Isaiah vii, 3, and xxxvi, 2, is mentioned an "upper pool," and this implies that there must have been a "lower" one, which in Isaiah xxii, 9, is really mentioned. One lying higher up than another could be the "upper" and the other the "lower" pool. As in one and the same valley two old pools are formed—the Mâmilla and the Birket es Sultan, it was only natural to locate those mentioned in Scripture here, and not much can be said against this, nor the identity be fully proved. The pool which Hezekiah made is quite another one, as I have pointed out in the *Quarterly Statement* (1892, p. 9, *et seq.*), situated in the upper part of the eastern or Kidron Valley. In the time of the siege of Jerusalem by Titus, Josephus speaks of pools *inside* the town, but mentions also the "Serpent's Pool"[2] as adjoining Herod's monument, which was found and

[1] *See* my paper on "The Dragon Well," p. 230.

[2] Josephus, "Wars," V, 3, 2.

described in the *Quarterly Statement* (1892, p. 115), situated just west of Birket es Sultan. This notice proves that this pool (Birket es Sultan) existed when Jerusalem was destroyed by Titus. It is remarkable that afterwards the Talmud does not speak more fully of the pools of Jerusalem—very likely because they were not in any connection with the religious conceptions of the Jews; and the case is the same later with most of the Christian pilgrims, as there was no indulgence of any kind connected with the pools, except Siloah and Bethesda. Even Felix Fabri, who often goes into minute details, does not mention the pool in question, although he often passed along its brink.

The first distinct notices of this pool we have from the Crusading times, when it was called "Lacus Germani," or the pool of a German by birth, who probably had the surname Germanus. That the pool already existed at the time we have already proved, and he not only restored it, but at the same time enlarged it, which proves that he wanted and got two[1] pieces of ground from the Church and Convent of Zion at the foot of this mountain, by a change of another piece of ground or vineyard near the Church of Procopius. These newly-acquired pieces of ground were at the foot of Mount Zion, and below and to the side of his house. He had need of it to make a pool for gathering water from the slopes of the hills for common use and for watering the horses.[2] For repairing the old pool he did not want more ground, but for enlarging the already existing one; and we may be sure that this pool, with the walls, roads, &c., was brought at that time to the size and shape that it has now. The pool not only became larger in extent, but, by the side-walls being placed higher up on the slopes, much deeper, and so the south wall had to be made 16 feet higher (*see* Plan and Sections). Germanus's house may have been the one now known as Bishop Gobat's School, of the Church Missionary Society, or perhaps even lower down and nearer his pool, where there is the ruin of a former house close to and a little higher than the aqueduct where it makes a bending. For a proper house the foundations are rather too narrow, only forming a single room; and if really this was his house, he was then a single man who had devoted himself and his property to the service of the neighbours and the whole community. Other traces of former houses I have not yet detected in this neighbourhood, except on the opposite hill.

All such waterworks require to be often looked to and small repairs done, otherwise they soon go to decay; and so we find that about one century later, according to the inscription given by Schwarz and Schulz (*see* Tobler in his "Top.," ii, p. 78), in A.D. 1291, Sultan Muhamed ibn Kilian restored the aqueduct and made the smaller annexed pool, and certainly also repaired the large one, which hence was called the Pool of the Sultan, or Birket es Sultan. Marino Sanuto saw this pool, putting it down on his plan of Jerusalem, and so as if it had been divided into

[1] Probably one on the western the other on the eastern side.

[2] *See* Tobler, "Topographie von Jerusalem," ii, Berlin, 1854, p. 72.

several parts, and remains of the north wall of the original pool had been still standing, or at least were recognisable, so that with the aqueduct bridge and the south road there would then have been six cross-walls, and he gives just six strokes across, otherwise his figure is rather a puzzle. About 170 years later (A.D. 1484) it was apparently in decay, as Felix Fabri does not mention it, but speaks of work having been begun to bring water from a great distance to Jerusalem, and removing old water-courses, and making tanks for the storage of water. Whether the work was interrupted for a time we do not know, but it was finished half a century later (A.D. 1537), as is stated by the Arabic inscription on the fountain standing on the south wall of the pool. It is quite clear that at the time of these repairs the above-mentioned strengthening wall was built with the small hewn stones, and also the middle piece of the wall over it, together with the fountain and the pipes bringing the water to it, as also the mosque. When, 28 years later, Helferich (A.D. 1565) saw the pool empty, this does not indicate that it was out of repair, but that the pool, through the water being used, may have become empty every year. Twenty years later (A.D. 1586) Zŭallart shows in his plan the four walls, or the well, in a large place embraced on all four sides with a wall, so signifying this pool. Della Valle, A.D. 1616 (I, 159), says : "The water of the Bethlehem aqueduct runs on top of the Bersaba (erroneously called so) Pool as a living fountain." Hence the fountain on the top of the south wall was still in acting condition. And a little later Quaresimus (A.D. 1620) speaks of a wall and embankment, over which the Bethlehem road passed, of low walls on east and west, forming a kind of pool. Zuriner (A.D. 1658) calls these walls strong, and remarks that the channels which formerly brought water to the pool were still to be seen in the north. In A.D. 1673 it was reported that the pool was in good condition ; but 50 years later (1723) it is described by Ladoir and Pococke as "ruinous," as all later visitors describe it. Nothing was done in the way of restoration. In 1846, when I saw it first, the south wall was bearing still for the greater part the cement, but this has since gradually fallen down, so that, as above stated, every stone can now be seen. The accumulation of earth in it was much higher than now, as already mentioned, and the pool is now, since about a dozen years, used as the place of the weekly cattle market, as the going down the old rock steps is not very bad for animals. The central flat ground is nearly every summer used as a threshing-place, as the corn, &c., can so easily be watched and protected. The north-eastern comparatively level rocky ground is every year used as a place for pounding hamra.

THE DRAGON WELL.

By Dr. Conrad Schick.

The Dragon Well is mentioned only once in the Bible (Neh. ii, 13) at the examination of the ruined walls of Jerusalem by Nehemiah at night. He says he went out by the Valley Gate, even before the Dragon Well, and to the Dung Gate, to the Fountain Gate, and to the King's Pool, and turned back and entered by the Gate of the Valley. Most of the topographers, from Robinson[1] down to Professor Dr. T. F. Wright, in *Quarterly Statement*, 1896, p. 172, put the Valley Gate in the neighbourhood of the present Jaffa Gate, which agrees fairly with Nehemiah xii, 31–39. Although the starting point of the two companies is not mentioned, yet it must have been the Valley Gate or its very neighbourhood, somewhat south of it, where they rose up to the top of the wall.

Now Nehemiah (ii, 13), after passing this gate, came to the Dragon Well, as he was going southward down the valley, and not westward; so the Dragon Well cannot be looked for at Birket Mâmilla, as so many writers have done, but with more probability at the so-called lower pool, or Birket es Sultan, as I have suggested in my recent paper written on this pool, where I say that in it was once a rock cave, out of which, at one season of the year, a spring may have risen, as in many places in this country. This spring gave the first motive to build here a pool, as was often the case with other springs in the neighbourhood of Jerusalem and elsewhere. This spring would be the Dragon Well. In the *Quarterly Statement*, 1889, p. 44, Mr. Birch remarks:—"Evidently on the west (of the Holy City) there was a spring called in Nehemiah ii, 13, the Dragon Well (really spring, *'ain*)." And Robinson says:—"All these circumstances, as well as the nature of the ground, seem to leave little room for doubt that an open fountain did anciently thus exist somewhere in the vicinity of the upper pool west of the city."[2] This he erroneously identified with "Gihon," whereas it was the Dragon Well—which has not to be looked for near the "upper pool," or Birket Mâmilla, as done by Robinson and other writers. Nehemiah had no need to go from the Valley Gate westward to such a distance. He wanted to go round the city and hence down the valley (southward), where he soon passed the lower pool, or the Dragon Well. It caused much confusion that, in the Middle Ages and until modern times, this spring became connected with Gihon. The New Testament does not mention Gihon—as at that time this name was no more in use—but mentions instead Siloa, and so does the historian Flav. Josephus, speaking of Siloa, and at the same time also of a

[1] "Felix Fabri," Pal. Pil. Text Soc., Part II, vol. i, p. 200.

[2] "Biblical Researches," i, p. 347, Boston, 1856.

"Serpent's Pool," or Well ("Wars" V, 3, 2), telling us that Titus razed and levelled all the ground from Scopus to Herod's Monuments, "which adjoined to the pool called "the Serpent's Pool" -dragon and serpent are often synonymous; and from this notice we see that the old name was still in use and not changed, and, further, that the pool took its name from the spring. That it means the site of the present Birket es Sultan, we learn from what he further says (V, 3, 5), that Titus moved his original camp, and divided it into two parts, one making a fortified camp two furlongs distant from the north-western corner of the city, and the other more to the south, on the height opposite the Tower of Hippicus—the present castle, also two furlongs distant from the wall—at the end of the levelled ground, and so on the height west of Birket es Sultan, where recently Herod's monuments were found, as reported in *Quarterly Statement*, 1892, pp. 116 and 205.

The real cause that this spring and pool were connected with a dragon, and hence so called, we do not know, and various suggestions have been brought forward, as that the aqueduct goes on the slope of the mountains in a serpentine line, and therefore its outlet was called the Serpent's or Dragon's Well, in which case the aqueduct must have existed in Nehemiah's time, which is most likely, as it is believed that Solomon made the first aqueduct, bringing water to the Temple. My idea was always that the outlet of the aqueduct[1] or of the spring here, the water pouring in a basin and further on to the pool, had the form of a dragon's head—as often may be seen, even in modern times, and without looking for it, in China or Japan. The Orientals are accustomed to give things the name of some characteristic feature of it, and so here the head of a dragon. Other people think that the name originated in some fabulous saying—that a dragon lived in the spring—as at the Well of the Virgin in the Kidron Valley, holding the water back sometimes and sometimes letting it flow, as the ancients explained the intermittent springs. If this is the case, then the Dragon Well was an intermittent spring, like Siloah. Further, a few years ago, a lady pointed out to me that in Birket es Sultan are, in summer time, black and long worms, in such great numbers as are not seen elsewhere, and asked whether this circumstance would not account for the name of this pool, "Serpent's Pool or Dragon's Well." I mention this merely to show the various suggestions, and leave it on its own merits. At the old Temple site or the present Haram esh-Sherif, some distance from the north-east corner

[1] The proper or end outlet of the aqueduct was in the Temple area, but that there were also outlets at fit places between, and so here at Birket es Sultan, is as much as certain.

"May not the aqueduct, with its long winding course from 'Solomon's Pools,' have been called the 'Tannin,' 'Dragon,' or 'Monster,' as the winding ascent to the fortress of Masada was called 'the Serpent.'"—Sir Charles Wilson, in Smith's "Dictionary of the Bible," 2nd edition, 1893, vol. i, Part I, p. 803.

of the platform, is a round-shaped cistern, called Bir el Hanish, which means exactly Dragon Well. When examining the place, not one of my attendants was willing to go down, fearing the *Hanish*, or Dragon. It may be that one day a fearful serpent was seen there, and so the cistern was henceforth called by this name, probably it was also so with the Dragon's Well, spoken of in this paper. Jeremiah, chap. ix, 11, predicted that Jerusalem should become a "den of dragons," which certainly was fulfilled, and dragons, or fearful serpents, were, as one clearly sees, not in ancient times such very rare creatures as they now are.

HEBRON AND ITS NEIGHBOURHOOD.

By Dr. Conrad Schick.

After more than a score of years I recently visited this old city again, and found it much altered, enlarged, and in some degree modernised; and on looking at the large Map and "The Memoirs," I felt the duty and the desire to give a more complete plan than that in "The Memoirs," iii, p. 352. I had at the same time in my hands the map and description of Dr. Rosen, of which Colonel Conder speaks in the *Quarterly Statement* for 1881, p. 270, *et seq.*[1] I have divided this tract of land into 30 squares, each of one kilometre, in order to find easily the names spoken of in the description. Some of the names are uncertain, and I followed in general "The Memoirs" and "Name Lists."

The Names of the Places.

Abraham's stone (5 D)—Rosen.
'Ain Bussah or Hameidan (1 A).
„ Darib (Rosen), or Magaribeh (4 B). Not described anywhere, but mentioned by Rosen, p. 15.
„ Deir Bahhah (3 A)—*see* "Memoirs," p. 320; "Name Lists," p. 385.
„ Fesfus (3 B). Mentioned by Rosen, p. 15.
„ Hasan (4 A)—mentioned by Rosen, p. 15, and Conder's map.[2]
„ Heskah (6 C)—Rosen, p. 16, and Conder's map. Rosen calls it a large spring, forming a brook.
„ Ibn Islîm (4 E)—"Name Lists," p. 386; Conder's map.
„ Jebel Amba (4 B). A small spring, according to Rosen, p. 15.
„ Jedîdeh (2 D)—"Memoirs," p. 307; "Name Lists," p. 386; Conder's map.

[1] Issued in the "Zeitschrift der Morgenländischen Gesellschaft," vol. xii, p. 477 (I think of the year 1857, as Dr. Rosen prepared it in the year 1856).

[2] The map referred to by Dr. Schick as "Conder's map" is that published in the Survey of Western Palestine, "Memoirs," iii, p. 352.—Ed.

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'Ain Kana (4 C). A nice spring close to the road; an aqueduct brought formerly the water to the large Kana (aqueduct), and so to the city—Conder's map.

„ Kashkaleh (2 D)—"Memoirs," p. 306; "Name Lists," p. 386.

„ Khâbieh (2 D) (Rosen, 'Ain el Hameide). "Memoirs," iii, p. 320. Khabieh means "hidden."

„ Kheir ed Dîn (3 C)—*see* "Name Lists," p. 386.

„ Magaribeh (4 B). Is most likely the same as "Derib."

„ Mezrûk (5 C)—"Name Lists," p. 387. Close to it is now built a new house—*Quarterly Statement*, 1881, p. 270.

„ Neruk (Neruh) (2 C)—Rosen, p. 7. It flows in the field a little south of the road. I observed no masonry at it.

„ Nimreh (3 D)—Rosen, p. 10; "Name Lists," p. 401.

„ Sâreh (3 C)—"Memoirs," p. 314; "Name Lists," p. 387; *Quarterly Statement*, 1881, p. 270. Rosen says, p. 10: "Situated behind the road, the early travellers did not see it; only Petâchiah of Regensburg mentions it; the water runs out of a high wall into a basin."

„ Sebta (3 B)—Rosen, p. 6, and Conder's map. Not on the large. "Memoirs," p. 360.

„ (es) Shems (2 A)—"Memoirs," p. 361, not on large map; Conder's map.

„ Umm el Faraj (2 D)—Conder's map.

„ Wâdy Bussâs (4 B). Rosen gives 'Ain Wady Ebsas, p. 15; Conder's map.

„ Zerka (6 B)—Conder's map; "Name Lists," p. 387.

Aqueduct (2–3 C), also (2 D)—Conder's map; Rosen, &c.

Ballûtet Sebta (3 B)—"Name Lists," p. 388 (the so-called Abraham's tree), near Hebron; "Memoirs," p. 308.

Batn Abu Sad (3 C)—Conder's map. The height west of 'Ain Sareh, with some slight ruins and new houses.

Beit el Khûlil (5 D) = the house of Abraham—"Memoirs," p. 322, following.

Bîr Abu Debbâkeh (1 C)—Conder's map.

„ el Haddad (2 A)—Conder's map. The word means well of the blacksmith.

„ el Hajjeh (1 E)—Conder's map.

„ Ibrahîm (2 D)—"Memoirs," p. 307.

„ Ifneh (6 C)—Rosen, p. 16; and Conder's map. The *bir* used now as a stable.

„ Ijdeh (4 D)—Rosen and Conder's map.

„ en Nusâra (4 C)—"Name Lists," p. 391.

„ er Râmeh (5 D)—Conder's map, and "Name Lists," p. 391.

„ es Sebîl (1 B)—"Name Lists," p. 391; Conder's map.

„ esh Shakhâtîr (2 A)—Conder's map.

„ Shâwer (1 E)—Conder's map.

„ es Shems (*see* 'Ain).

Bîr Y'akûb (marked 5 on map) (2 D). A very old one—Conder's map.

„ Y'akûb (2 D)—Rosen and Conder's map. An old well, south of the road going west after it leaves the Jerusalem road.

Bukei'a el Koton (1 E)—Conder's map. The word means a small bak'aa or broad, flat valley surrounded with hills, and Koton = Cotton.

Burj Heskah (6 C)—Conder's map and Rosen.

Cemetery of the Jews, Hebron (2 D)—"Memoirs," p. 308.

Cemetery of the Moslems, Hebron (1 and 2 D).

Deir el Arb'ain (2 D)—"Memoirs," p. 327; Conder's map.

El Bŭssah (1 A)—Conder's map. The word means a place of moisture where grass is growing.

Eskak el Hish (2 B). Meaning the entrance lane to the forest—Rosen, p. 3.

Haram (2 E)—"Memoirs," p. 333.

Haud el Ayady (2 A and B). The word means a trough—Conder's map.

Hebron—*see* below.

House of Abraham—*see* Beit el Khulîl.

Jebel Abu Harje (1 D). Only by Rosen.

„ Abu Ihlal (3 B)—Rosen, p. 2.

„ Abu Immameh (4 A)—Rosen's map.

„ (Daher) or Abu Rumman (1 B)—Rosen, p. 3; Conder's map.

„ 'Ain Amba (4 B)—Rosen, p. 15.

„ el Batrakh (5 D). A beacon station of the Survey; the highest point in this district, if I read right on the large map, 3,345 feet above the sea—*see* "Memoirs," p. 295. There this summit is not minutely described, but Rosen (p. 20) says: "The upper part is a tell, now laid out in terraces and cultivated. On the top are cisterns and remarkable ruins, with large hewn and bevelled stones, but no Jewish tombs." Marked on Conder's map.

„ Beilûn (2 and 3 D). The mount between the two Khallets above the "es Sheikh" quarter of Hebron—Rosen, p. 3, and Conder's map.

„ Besâtîn (4 D)—Rosen's map.

„ Daweirbân (1 A). According to Rosen; Conder's map.

„ Elâni (4 C)—Rosen, p. 3, and *Quarterly Statement*, 1881, p. 270.

„ Gahar—Rosen, p. 22; Râs Jûher on large map (1 E)—"Name Lists," p. 406. Rosen says that on its summit are ruins, cisterns, &c., and thinks it to be very little lower than Jebel Batrakh, the highest point (3,345 feet) in this district.

„ Galis, or Jâlis (1 E)—Rosen, p. 9, and Conder's map. The mount directly east of Hebron.

„ Geabireh—Rosen; J'aâbireh—Conder's map. The mount above (or north) of the main part of Hebron, with a mosque, &c., on its summit—*see* Rosen, p. 6, and "Memoirs," p. 307, where the names are spelt a little differently from those on the map.

Jebel Gelgel (2 C)—Rosen, map, and p. 3. Above the quarry Kuff en Neby. Might this have been in ancient times a Gilgal?

„ Habâl er Riâh (2–3 D)—"Memoirs," p. 307; and "Name Lists," p. 396.

„ el Ifneh (5 D)—Rosen's map, and p. 16; Conder's map.

„ Jeledeh on Conder's map, and Gelede on Rosen's (2 B). The mount opposite "Sebta" or Abraham's Oak, with a few new houses.

„ Kubb el Jânib (1 D). The mountain south of Hebron—"Name Lists," p. 396; Conder's map.

„ Neir (1 C)—Rosen, p. 3, and on his map. The chief height and continuation of Daher Abu Rumman.

„ Nimreh (3 D)—Rosen, p. 10, and especially on his map.

„ Rumeideh (2 D)—Rosen, p. 3; Conder's map; and "Memoirs," p. 308.

„ Wâd el Franj (2 E)—Conder and Rosen.

Juret Bachlas (6 D) Rosen, p. 16. Conder's map gives Jûrat Bahrah; belongs to the Wadys.

Kabr Hebrûn (2 D)—"Memoirs," p. 308; "Name Lists," p. 394; Conder's map.

Kana (3 C)—the Aqueduct—Conder's map; *see* Rosen and 'Ain Kana above; *see* Rosen, p. 9.

Khallet Abu 'Asa or Kasheh (1 D). Meaning the dale of the father 'Asa, or of the Akasheh, *i.e.*, the Sheikh with long hair (a derwîsh)—Conder's map.

„ Abu Majnûn (2 B)—Conder's map.

„ el Batrakh (4 D)—Rosen; Conder's map.

„ el Butmeh (4 C)—Rosen, p. 8, and Conder's map = dale of the Terebinth tree.

„ el Franj (2 E)—Conder's map, and Rosen, pp. 15 and 22, and his map.

„ Hadûr (2 D). The side valley between the quarter "es Sheikh" and the main part of Hebron—Conder's map.

„ el Hîsh (2 B). Shukâk el Hîsh—Conder's map.

„ Keshkaleh (2 D). The side valley west of the "es Sheikh" quarter of Hebron—Conder's map.

„ Masheh (1 D)—Rosen, but it means most probably Khallet Akasheh—*see* above.

„ en Nusrâny (1 B)—Conder's map.

„ es Sherîf (3 B)—Conder's map; or Maghârebeh (3 B)—Rosen, p. 22.

Khŭrbet Abu-ed Dubh, on large map "ed Duba" (5 D)—Rosen, p. 17; "Name Lists," p. 397; "Memoirs," 347; Conder's map.

„ Bachlas (6 D)—Rosen, p. 16. Name of the ruin near Joret Bachlas.

Khŭrbet Dahdah (5 C)—Rosen, pp. 7 and 16. The height of Khŭrbet "Râmet el Amleh" is so called, and has the ruins of Dahdah in the south and Amleh in the north—Conder's map and the large map.

„ Dar Esha (6 C)—on Conder's map simply "Es-ha"; "Memoirs," p. 353; "Name Lists," p. 398.

„ Dar el Haddad (2 B)—Rosen, p. 23, and the mark for it on large map, but without the name.

„ el Habs (6 C)—Conder's map; "Name Lists," p. 393.

„ Hâkûrah (3 A)—"Memoirs," p. 353; "Name Lists," p. 399; large map and Conder's.

„ Keizûn (5 E)—"Memoirs," p. 355; "Name Lists," p. 399.

„ Khallet Magaribeh (4 B)—Rosen; Conder's map.

„ Kut'a (3 D), or better of Wad Kut'a—Conder's map; "Name Lists," p. 413.

„ Muntâr (3 B)—Rosen, p. 3; Conder's map; "Memoirs," p. 376.

„ Nimreh (3 D)—"Memoirs," p. 360; "Name Lists," p. 401; Conder's map.

„ en Nusâra (4 C)—"Memoirs," p. 360; "Name Lists," p. 401; Conder's map.

„ Râmet el 'Amleh, or 'Amileh (5 C)—Rosen, pp. 7 and 16; "Memoirs," p. 377.

„ Sebta (3 B)—"Memoirs," p. 360; and Conder's map.

„ Serâsîr (2 A)—"Memoirs," p. 361; and "Name Lists," p. 401.

„ Sîret Bellah (6 D)—Conder's map.

„ Wady Kut'a (3 D)—Conder's map, and "Memoirs," p. 371, and "Name Lists," p. 403.

Kubb el Jânib (1 D)—Conder's map and Rosen, p. 6.

Kuff en Neby (2 C)—Rosen, p. 3; Conder's map.

Kurn et Thor (or Tor) (3 C)—Conder's map, and Rosen, p. 6.

Mohawîr (4 C)—Conder's map, and Rosen, p. 9, and his map. Name of a long hilltop with a few new houses.

Mŭghâret Dhukkâ'ah (2 B)—Conder's map; *Quarterly Statement*, 1881, p. 270 (middle); *see* "Memoirs," pp. 375 and 381, where the legend is told.

Pools, *see* Hebron.

Râmet el 'Amleh (5 C)—"Memoirs," iii, p. 377.

Râmet el Khulîl (5 D)—"Memoirs," p. 377; "Name Lists," p. 405; Rosen, p. 17.

Ras J'aâbireh (2 E)—Conder's map; Rosen, Ras Geabireh, p. 6, and his map.

„ et Tor, or Kurn et Thor (3 C)—Conder's map, and Rosen's map, and p. 5.

„ Yanbû'a (5 B)—Beacon station; Conder's map; Rosen, p. 6; "Name Lists," p. 406.

Rujm Sabzin (4 C)—according to Rosen, p. 8.

Russian Hospice (3 B)—Conder's map; "Memoirs,' iii, p. 308.

Sahel Sabîyeh (1 E)—Conder's map, and Rosen, p. 15.
„ Sebta (3 C)—Rosen, p. 2, and his map.
Wâdy Abu 'Asa, or Harjeh (1 D)—Rosen's map.
„ Abu Rummân (1 B)—Conder's map.
„ el Besâtîn (4 D)—Conder's map, and Rosen, p. 22 (wrong on his map).
„ Burj Heskah (6 C)—Conder's map, and Rosen, p. 16.
„ el Bussâs (4 A)—Conder's map ; Rosen gives W. Ebsar.
„ el Bŭssah (1 B)—Conder's map.
„ Deir Bahhah (3 A)—Conder's map, and Rosen, p. 2, and his map.
„ Gelgel, or Shukâk el Hîsh—according to Conder's map (2 C).
„ Halfah (1 A)—Conder's map, and Rosen, p. 15.
„ Ibn Islîm (4 E)—"Name Lists," p. 411.
„ el Kady (1 E)—"Name Lists," p. 412 ; and Conder's map.
„ Kanah (3 C)—Conder's map, and Rosen, p. 9, and map.
„ Kedîr (3 A)—Conder's map ; "Name Lists," p. 412.
„ Khallet el Magaribeh (3 B)—Rosen, p. 15, and his map.
„ Kheir ed Dîn (3 C)—Conder's map, and Rosen, p. 5, and his map.
„ el Kurm (3 A)—Conder's map, and Rosen, p. 3, and map.
„ Kŭrûsh (3 E)—Conder's map ; "Name Lists," p. 413.
„ Kut'a (3 E)—Conder's map, and "Name Lists," p. 413 ("Memoirs," p. 371, "Khurbet").
„ Malaibeh (4 B)—Conder's map, W. Melabeh ; Rosen, p. 9.
„ Menser—according to Rosen ; Khallet en Nusrâny—Conder's map (1 B).
„ Mezruk (5 C)—Rosen, p. 17 ; "Name Lists," p. 413.
„ En Nusâra (4 C)—Conder's map ; "Name Lists," p. 414 ; Rosen, p. 8, and the following.
„ Serâsîr (1 A)—Conder's map and Rosen's map.
„ Sherabîeh (1 C)—Conder's map.
„ Shukâk (1 A)—Conder's map.
„ Sûwed (6 B)—Conder's map ; Rosen, p. 16 ; and "Name Lists," p. 413.
„ Thoghrah (1 C)—Conder's map ; Rosen, pp. 5 and 33, and his map.
„ Tuffâh (2 C)—Conder's map ; Rosen, pp. 5 and 6 ; "Name Lists," p. 413.

Hebron the City, and what belongs immediately to it (*see "Memoirs," p.* 305).

The city of Hebron formerly consisted of four distinct parts, but in modern times so many new houses have been built between that it has become all as one.

1. The Haram (1–2 E), or Sanctuary over the tombs of the Patriarchs, is the chief and most interesting building of the whole, standing on the western slope of the hill Jabreh, so called from a mosque standing on its top—"Memoirs," p. 333, following.

2. Below the Haram is the Castle, partly ruined now; "Memoirs," p. 307, following.
3 and 4 are two pools, described in "The Memoirs," p. 306.
5 and 6 are two old *birs* or wells; No. 6 has a mosque close to it called Bijurd, and connected by legend with Abraham.
7 is the mosque (2 D).
8 is the mosque of the Sheikh (2 D), ('Aly Bukka), the second chief building in Hebron.

The Quarters, &c.

A (2 D), the Hâret es Sheikh ('Aly Bakka)—"Memoirs," p. 306.
B „ „ ez Zâwieh—"Memoirs," p. 306.
C „ „ Kezâzin (quarter of the glassmakers).
D „ „ el 'Akkâbeh (quarter of the ascent).
E „ „ of the Haram, or Kŭl'ah; the hill behind and higher up is called Kerâd—"Memoirs," p. 306.
F „ „ of the Muheisin (name of a family)—"Memoirs" gives Muhtesbin, p. 306.
G „ „ Kotton (= Cotton).
H „ „ Mesherky = the eastern quarter.
I „ the newly-built quarter.

The Bazaars are chiefly in the quarter D, or the 'Akkâbeh.

Other places are noted on the map itself, but some tombs require to be noticed.

The tomb of Jesse, the father of David, with that of Ruth, is shown on the hill Rumeidy—"Memoirs," p. 308.

The tombs of Abner and Ishbosheth are in the court of a Moslem's house.

The tomb of Mohamed Kalafus is opposite the north corner of the large pool, No. 3.

The tomb of Abu Sâkawâti, near Deir Arb'ain—"Memoirs," p. 327.

WADY 'ARRÛB, THE ARUBOTH OF SCRIPTURE.

By Dr. Conrad Schick.

In 1 Kings iv, 7, we read:—"Solomon had twelve officers over all Israel which provided victuals for the king and his household; each man his month in a year made provision." In the following verses the names of the persons and their respective provinces are told. Looking closer to the matter we perceive that three of them had their districts beyond the Jordan (v. 13, 14, 19); three in Galilee (v. 15, 16, 17); three in the plains and hill country (v. 9, 11, 12); and three in the mountains, namely (v. 8), the son of Hur, in the mountains of Ephraim, the

northern part; (v. 18), Shimei, the son of Elah, in Benjamin, the middle part of the mountains; and (v. 10) the son of Hesed, the southern province, or "Aruboth, Sochoh, and all the land of Hepher." Now the land of Hepher was, according to Joshua xii, 17, situated in the southern part of Judah and Simeon, Sochoh north of it and more westward (xv, 35), whereas Aruboth was east of the latter in the centre of Judah, where to-day is found the 'Arrûb place, which is apparently the ancient Aruboth, a locality only once mentioned in Scripture, and it seems not to have been a large city, but simply a notable place with some dwellings. In all these 12 provinces there is scarcely mentioned the proper city where the officers were residing, but the provinces are named according to some remarkable feature in them, and so here the 'Arrûb Valley, bringing forth much provisions. It is described in "The Memoirs," iii, p. 301, in the following words:— "There is one valley especially well watered, as its name implies,[1] Wady 'Arrûb, from which the Jerusalem aqueducts are supplied. Running water was found in this valley, forming a *seil* or stream, in the month of October,[2] 1874, and there was plenty of water in the springs and spring wells along its course. The water from 'Ain ed Dilb and 'Ain Kûeizîba (a few miles distant south-east), also finds its way into this valley; the water of all these springs is very good. . . . . The pool is one of the main reservoirs supplying the aqueduct to Jerusalem, somewhat smaller than those near Urtâs, 240 feet by 160 feet, but it resembles them in masonry, as does the channel of the aqueduct." It is situated lower down the valley, where all the various branches of the latter are united and it becomes narrower, till half a mile further down it is a rocky gorge, where, as in the western part, it is about two miles broad, with a number of watercourses, finally uniting at the pool. Close to the pool runs out the most copious spring, and there is the ruin of a former mill. The water was conveyed by the aqueduct a very long and winding way, first to the pools near Artâs, and either into them, or further on to Bethlehem and Jerusalem, or when required, also to the pool at the foot of Herodium, the present "Frank Mountain."

It is remarkable that in this wide and fertile valley of 'Arrûb there are found only a few ruins, and these of only small places—larger places or cities having been situated on the surrounding hills: and so it is still, as may be seen on the large map, there are only three such small and now ruined places: Khŭrbet Beit Sh'âr and Khŭrbet Marrîna, in the plain, yet situated about 100 feet higher than the pool; and the third more

[1] This word is also used in Gen. vii, 11, translated: "Windows of heaven," out of which the waters of the deluge flowed. [It should be borne in mind that there is a radical difference between the Arabic root عرب and the Hebrew ארב: the former having *'ain* for the first letter, and the latter *aleph*. The *aruboth* of Genesis vii, 11, are latticed windows, which when opened allow the water to fall, when closed, prevent its falling.—Ed.]

[2] The most dry season of the year.

east: Khŭrbet el Fureidîs, which is on the top of a rocky hill, standing like an island in the plain, towering more than 100 feet above the general surface, and situated a short mile west of the pool, between the two chief watercourses of the plain, where they come nearer to each other before uniting, about 1,500 feet east, at the bridge of the new Hebron road, where there is now a new station. At the eastern foot of the hill comes out a nice spring, so that between it and the new road is now the general watering place for animals. Twenty years ago, when I was examining all the springs and old aqueducts by which Jerusalem was provided with water, I put down on my map this hill as Cherbet Arub, people not telling me any other name, but learn now from the map and "The Memoirs" of the Palestine Exploration Fund its real name, viz., Fureidis, or the "Little Paradise," which, of course, is much more suitable, as really in ancient times there must have been fine gardens and orchards here, which by skill and labour would become a sort of paradise. This seems to me the more probable, as I have been for 20 years convinced that the son of Hesed, one of Solomon's provincial officers, had his abode on this hill, if not always (as these noble officers were of such high rank that even two of them were sons-in-law of the king, and might have their proper residence near the king in the capital), certainly once or even oftener in the year, when visiting this and the other districts of his province. "The Memoirs" (iii, p. 353) says that on the top of this hill are "walls, foundations, cisterns, &c." At the time when the various aqueducts were in use the inspector, with his staff, may also have had his abode here, also gardeners and others similarly engaged. The place was of importance, but never a regular city, and hence never named or counted with other cities in Scripture, but was the Aruboth or 'Arub-place.

Jerome gives also Aruboth as a place in Judah (*vide* Stark, "Palestine and Syria," Berlin, 1894, p. 16).

It may appear strange that the twelve districts are not named from one of their chief cities, but rather from some other characteristic; yet this is quite natural, as they were not political departments, but commercial or financial districts, and many of the real cities were exempted, as Jerusalem, and if not all the Levitical cities, at least those of the priests; and so Hebron and others would not be mentioned, whilst other places of minor reputation, being important in a financial point of view, were mentioned. So it was with Aruboth, which I take to be the present Wady 'Arrûb.

Josephus ("Antiq." VIII, 2, 3) counts only ten offices, putting some of the provinces divided by Scripture into one. He also places them in different order, mentioning first those on the mountains: first, the one of Ephraim; and the second, Dioclerus (the Greek name for the son of Hesed of Scripture (?)), which was over the toparchy of Bethlehem, mentioning a city instead of a valley ('Arrûb = Aruboth). Also, this proves the correctness of these statements.

In "Palestine under the Moslems" I find on p. 440:—"Nâsir-i-Khusrau

writes in his diary: "A couple of leagues from Jerusalem is a place where there are four villages,[1] and there is here a spring of water, with numerous gardens and orchards; and it is called Farâdis, on account of the beauty of the spot." The editor adds: "This is the ancient Herodium in the Wâdy Urtâs, at the present day known as the 'Frank Mountain.' The word *artâs* is probably a corruption of *hortus*, which has the same meaning as Firdûs."

To me it seems it might be more properly applied to 'Arrûb, where there is still the same name, as shown in the above article; and the four villages can also be found there, but not so easily at Urtâs. These four villages were in A.D. 1047 (850 years ago) inhabited, but are now desolate, and the gardens gone.

SOME REMARKS ON THE TABERNACLE CONTROVERSY.

By Dr. Conrad Schick.

During my long life I have not only studied this matter thoroughly, but have made several models of the Tabernacle, which are now in England, America, Germany, and Jerusalem. I made them in two forms—the one according to the explanation of the Jews, the other following in the essential parts Mr. Fergusson in Smith's "Bible Dictionary." So the visitor could judge for himself. Still I had to answer a great many objections, but have not gained much by them.[2] Under these circumstances it is natural that whenever there comes before me some article or paper on the Tabernacle I read it with interest, and so also the quite new idea laid down in the *Quarterly Statement*, 1896, p. 189. But finding this very incorrect I thought not much notice would be taken of it, in which presumption I was wrong, as since quite a controversy has arisen about it (1896, p. 223; 1897, pp. 154, 225). In these papers it is chiefly the meaning of the Hebrew text that is criticised, but how the Jews interpreted the words is left out entirely—yet Jews should know it best. But as apparently technical expressions are used, of which the real meaning is lost, so all have to go back to the root of the word, and bring things out differently. In these cases the architect or technical man should also be asked, and this gives me the freedom to make the following remarks:—

1. The paper (*Quarterly Statement*, 1896, p. 189) begins with a gross

[1] Khŭrbet Fureidîs; K. Beit Zâta; K. Marrîna; K. Beit Sh'âr.

[2] People are often remarkably ignorant.

error, giving the height of the Tabernacle "over 40 feet,"[1] whereas the "kroshim" (the boards), according to Exodus xxvi, 16, and xxxvi, 21, were only 10 cubits, or 15 feet, long, hence the Tabernacle when put up was only so high with a flat roof, or, as Mr. Fergusson gives it, with a pitched roof 22½ feet high. On what are the 40 feet, or 27 cubits, grounded? Apparently there is an error. Further, according to the text, each board had two sockets of silver on which the boards stood, and on each side (except the front) were five bars, and not only five in all, as the drawing (p. 189) shows, for we read in Exodus xxvi, 26–27:—"bars of Shittim wood" (whereas the sockets were of silver), "five for the boards of the one side of the Tabernacle, and five bars for the boards of the other side of the Tabernacle" (the drawing gives 2½), "and five bars for the boards of the side of the Tabernacle, for the two sides westward." This is the same as in chapter xxxvi, 31, 32. So there were 15 bars, without the "middle bar." Then I wish to remark that if the boards (put on both sides) were not standing upright but sloping, so that both were meeting at the top, the house was furnished, it did not want any carpets, whereas the carpets were just the main parts! For in chapter xxvi, 1, it is said: "Thou shalt make the Tabernacle of (or with) ten curtains," and in v. 6, "couple the curtains together. . . . it shall be one Tabernacle"—without the boards, those are mentioned afterwards. Further, according to Exodus xxvi, 2, and xxxvi, 9, the first curtains were 28 cubits, or 42 feet, long, hence hanging down 21 feet on each side, but as the greatest height of the Tabernacle (Fergusson) was only 15 feet, about 7 feet of the carpets were, on each side, useless or lying on the ground; and if, as stated in the paper I refer to, it was 40 feet high, 19 feet of the boards on each side had no covering. It is also stated that the bars were not round but in section square—the reason or proof is not mentioned—and would be unlike to modern Arabian tent-poles, as those are all round.

2. *Quarterly Statement*, 1896, p. 223.—Agreeing with Mr. Fergusson, except the "middle bar," which it makes a ridge-cord, extending from the middle of the west wall (as there were six—resp. eight—boards it would be between the third and fourth), eastward over the empty space of the Tabernacle as far as the middle pillar at the eastern entrance.[2] In fact, the difference is only between a cord and a wooden bar.

3. *Quarterly Statement*, 1897, p. 155.—Agrees with Mr. Fergusson's theory, but goes on to say that this theory does not agree with the text. In what manner I cannot understand, for Mr. Fergusson has five bars on each side—just as the text says—and the "middle bar" or ridge-pole is quite another one, not one of the five, for in Exodus xxvi, 26, 27, the side bars are described, and after that in v. 28 is then said: "And the middle bar, in the midst of the boards, shall reach from end to end"; "in the midst of the boards" means rather between and higher up and longer

[1] Also the diagram shows the height four times the width at the bottom.

[2] Between the boards there was support, so it required a piece of wood to be put on the top of both, over which the rope could be laid.

than the others; "from end to end," that is 40 cubits long. There were 10 curtains, each 4 cubits wide, making 40 cubits, whereas the boards, 20 in number, each 1½ cubits wide—as the text says—makes only a wall of 30 cubits, hence the rods on the sides were only 30 cubits long. That this ridge-pole wanted some support is unquestionable. There were the middle pillars on both ends, the corner boards being longer or rather having a movable arm upwards, some arrangement over the pillar between the Holy and most Holy and others, as I showed in my models.

It is said Fergusson invented and suggested things which are not mentioned in the text. This is so to some degree. But it is clear that there were some things which are not mentioned in the text. For instance, every Arabic tent has also a carpet on the floor; shall this wandering temple not have had one? I think it had, and that the floor was not left as bare earth or sand, but that a carpet was put on it, which, however, is not mentioned in the text. Further, the four pillars between the Holy and most Holy must have had some architrave, otherwise, although based each on a silver socket, they would not have stood firm enough when bearing the curtain. These latter also required some contrivance for hanging them up and keeping them in their right position, but this also is not mentioned. Again, the third and fourth covering wanted also some arrangements, which are also not mentioned in the text, and then comes the comparison with the temple, which was built according to the Tabernacle, only the measures were doubled. The temple, it is said, was 30 cubits high, that is, the doubling of the 15 of the Tabernacle. It had little buildings round about, also behind, and at the Tabernacle it was the verandah. It had a porch of 10 cubits, the doubling of the 5 of Mr. Fergusson's Tabernacle. It was 20 cubits wide "according to the width of the house," hence the doubling of the Tabernacle, which was 10 cubits wide, and so on. The paper of which I speak says, on p. 155: "Mr. Fergusson has not a single inch to enclose the large triangular spaces above the five pillars," but Josephus ("Antiq." III, 6, 4) speaks of many curtains besides those mentioned in Scripture, and if these will not be admitted, the third cover of red rams' skins, and the fourth of badgers' skins are only mentioned not fully described, so one has the liberty to arrange them according to his own idea, and in my models I filled up these spaces with the outer coverings (the third and fourth).

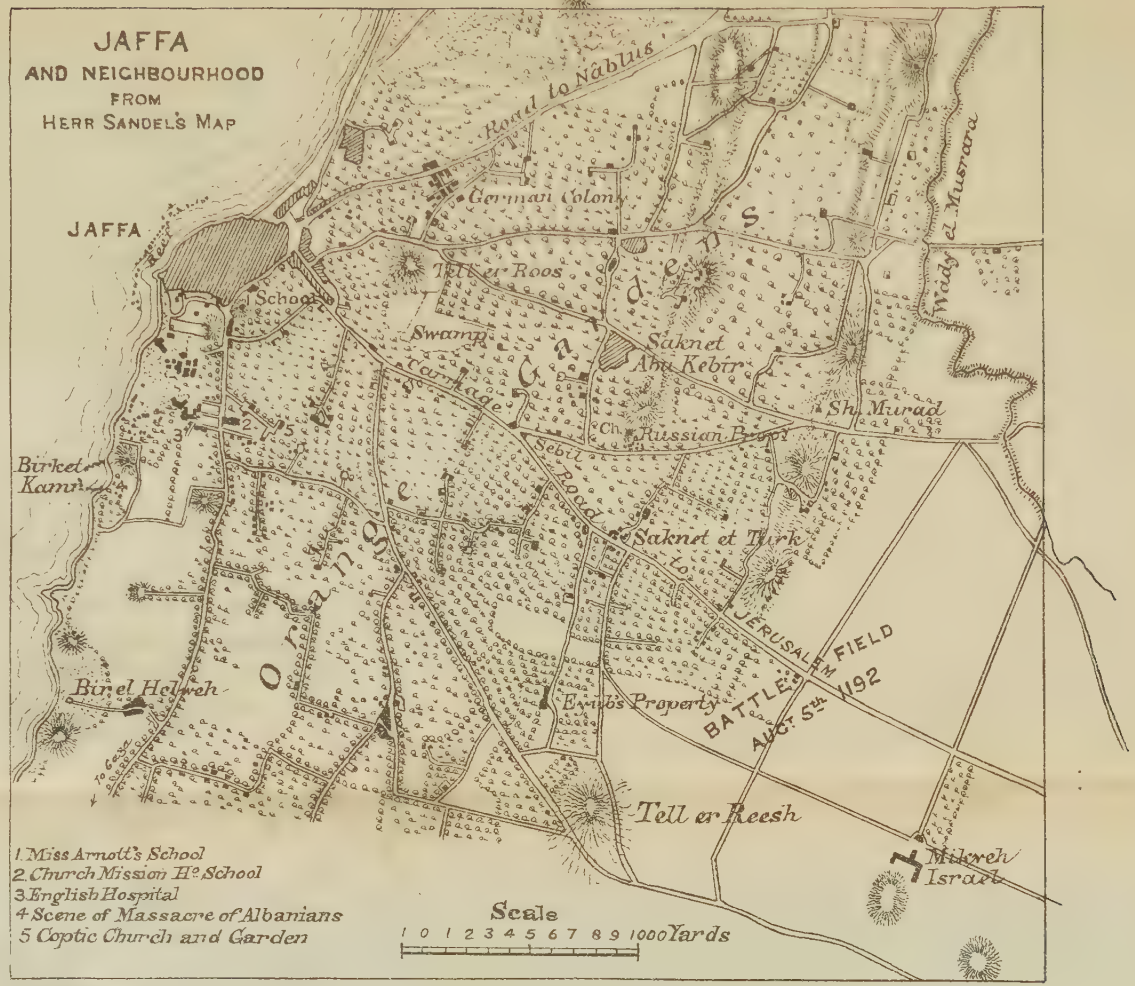
4. *Quarterly Statement*, 1897, p. 225.—This paper intends to show that the Tabernacle was a tent, and hence the right explanation of its description must be in conformity with an Arab tent. I had not the pleasure to see Mr. C. W. Colton's "little book" on the Tabernacle, and hence I cannot say anything about it, except what is here mentioned, viz., that he omits "the ropes invented by others to hold the planks" in place, as such are not mentioned in Scripture and not necessary, which are both quite true, but it is new to me that ropes had to hold the planks in their upright position. I have it not on my models, nor have I seen them in Mr. Fergusson's drawings, nor in any other. The bars hold the whole

structure together. The writer of this article agrees that the curtains may rest on the structure made up by the boards and bars, but thinks that the curtains could also further rest on the pillars, five at the entrance and four between the Holy and Holy of Holies, also being supported by the staves or poles of the utensils, taking them out of their rings when the things, showbread table, altar of incense, candlestick, &c., were resting on the ground, and using them during the resting time as additional supports for the curtains. This idea is ingenious, but I think incorrect, for although it is said in Numb. iv, 12, that after the utensils were wrapped in their various coverings they should be "put on a bar," this bar could not be at the same time the support of the curtains, which would be free when the four curtains of the tabernacle were taken away. The altar of incense was 1 cubit wide. To carry it on the shoulders of men poles of 5 cubits were long enough, only half the height of the boards of the Tabernacle, and could not have been used as supports for the curtains of it. The poles of the "altar of burnt offering" may have been used for such. The altar, 5 cubits wide, wanted staves or poles at least 10 cubits long, or even longer, and could be left there till the taking down of the four main carpets or curtains. All this is suggested to bring the Tabernacle in a fuller conformity with "oriental tents." But besides all this remains the framework of wood, the 28 boards, each $1\frac{1}{2}$ cubit broad, similar to which there is nothing in any regular oriental tent, and hence the necessary conclusion is that the Tabernacle was a special tent-building, not in full conformity with other tents, but as a wandering temple having its own special features. The more so as everything had at the same time a typical meaning.

TELL ER REESH, &c.

By Rev. J. E. Hanauer.

At a distance, according to Dr. Schick (*Quarterly Statement*, 1893, p. 286), of about 5,200 feet from the Eastern Gate of Jaffa, there is a long, low ridge or swell of ground, having upon it several depressed knolls (*see* enclosed map tracing) running through the orange gardens in a general direction from north to south, and crossed by the carriage-road to Jerusalem at the place where there stands a group of houses known by the name of "Saknet et Turk." About 1 kilometre south of this Saknet the undulating ridge culminates in a remarkable isolated *natural* hill called "Tell er Reesh." The name means "Mound of the Feathers" or "plumes," but the sound "Reesh" is temptingly suggestive of "Richard"; and though we have no proof positive that one of the two English Crusading Richards encamped here, yet it is not unlikely that Cœur de Lion did so, seeing that the Tell commands a first-rate



J. Akerman, Photo lith London

view of the lower ground on either side of the ridge, and that from the foot of Tell er Reesh there stretches away the battlefield on which, though greatly outnumbered by the Saracens, he defeated Saladin on August 5th, 1192 (*see* Wilken, "Geschichte der Kreuzzüge," IV, 552–561).

A little way north-west of the Tell is an orange garden, belonging to the family of the late Anton Eyûb. I call attention to this garden because the tomb mentioned by Dr. Thomson ("Land and the Book," edition 1873, p. 520) as having been discovered by the late Mr. Arutin Murad, U.S. Consul, and supposed by him to have been the tomb of Dorcas or Tabitha, is here and still accessible. Mr. Murad, so Dr. Thomson tells us, gave it to the Armenian Convent at Jerusalem. It has now passed into other ownership, and the late Anton Eyûb was so sure that it was the real tomb of Dorcas that by his express wishes he and his wife were laid to rest, when they died, in two of its kokim, which were thereupon walled up. At my request, Mr. J. Baldensperger, who is well acquainted with the Eyûb family, very kindly undertook to enquire as to the reasons the late Anton Eyûb had given for believing this tomb to be that of the saint, and the twofold answer I received is as follows :—

(1) "Up to the year 1859, about which time the Russians purchased the 'Bayaret el Markob' (*see* Dr. Schick's article above-mentioned), there was no counter-claim whatever against that of the 'Murad-Eyûb' tomb, but the Greeks and Armenians used every year to visit the place and hold Divine Service there on the day when the feast of Tabitha is celebrated." (This festival takes place in May, about the fourth Sunday after Easter.) "Since, however, the Russians acquired the property close to Saknet Abu Kebir and built the church on the summit of the knoll there, the pilgrimage has been diverted thitherwards."

Whether pilgrimage was made to the Murad-Eyûb site before the discovery of the tomb is not clear.

(2) "Some time before the property came into the possession of Anton Eyûb, and whilst the tomb was used as a pig-stye by the person who was then owner, a stone-cutter, who had gone to get some tools that had been left in the quarry close by, saw a bright light shining in the tomb. He approached and looked in. The pigs were invisible, but in the sepulchre he beheld a woman wrapped in a shroud. He thereupon told the owner what he had seen, and the latter had the swine instantly removed from the place. The light and the shrouded woman were also seen on another occasion, and after the Eyûb family had acquired the property. Therefore the tomb must have been that of Tabitha."

There is nothing remarkable about the sepulchre itself. It is an ancient Jewish tomb, like so many others that have of late years been found in he neighbourhood. A staircase at the bottom of a rock-cut tunnel, 4 metres long and 1·25 metres wide, leads down eastwards to a dome-roofed rock-cut chamber 3 metres long, 3 wide, and 3 high. The southern and northern walls contain each two empty kokim 2 metres long and 0·90 metre wide. Distance between kokim 0·45 metre. The two kokim

in the eastern wall are walled up. They contain the bodies of Anton Eyûb and his wife.

The ancient Jewish necropolis of Joppa, discovered by Professor Clermont-Ganneau, and described by him in 1874, and also by Dr. Schick in the latter's paper already referred to, is situated on the knoll where the new Russian church now stands, forming with its tower a striking feature in the landscape.

The small slabs with epitaphs dug up round about here are exceedingly interesting. Some have been published, but new discoveries are constantly being made. They marked the graves of Hellenistic Jews, such as those whose names we meet with in reading the Acts of the Apostles and St. Paul's Epistles. Some of them are bi-lingual, the names being given (like that of Dorcas or Tabitha) in Greek and also in Hebrew or Aramaic. A few have only the word "Shalom," *i.e.*, Peace, in Hebrew, under the Greek. As specimens may be interesting to Bible-readers, I am sending squeezes of several lately found and now in the collection of Baron von Ustinov, to whom my warmest thanks are due for his kind permission to make the impressions as well as for many other acts of courtesy.

About 1 kilometre east of the Russian church is the Mosque of Sheikh Murad which perhaps marks a Christian site. In Baron von Ustinov's collection there are two pieces of a remarkable marble slab which was found here. On one side is an Arabic inscription of which I am forwarding squeeze, and on the other side of the same slab some carving which once formed part (about a quarter) of the tombstone of a Crusading Bishop. One-half of his mitre, face, and beard are preserved, and also the crook of his episcopal staff and an angel blowing a curiously-shaped trumpet. A Latin inscription, of which, unfortunately, only a fragment of the date remains, once framed in the whole. I am sending a squeeze of this together with the others. The Arabic inscription is also mutilated.

The Bishop of Salisbury, to whom I had the honour of showing this fragment, thinks that the prelate whose resting-place it marked, "died apparently on All Saints' Day, 1198" ("Salisbury Diocesan Gazette," June, 1898, p. 131).

Since writing the above, a friend has shown me the following account of Tabitha's grave in the new edition (1897) of Frere Lievin's "French Guide Book for Roman Catholic Pilgrims" (vol. i, p. 129; Jerusalem, 1897):—

"*Caveau sépulcral.*—HISTORIQUE: D'après la Tradition c'est là qu'a dû être ensevelie la pieuse Tabitha; mais on ignore laquelle des loges funéraires de ce caveau sépulcral a eu l'honneur de posséder la depouille mortelle de cette sainte femme.

"ETAT ACTUEL: Ce caveau sépulcral, assez grand et bien distribué, est situé à 30 met. S. de la maison de M. Antoine Ayoub," &c.

It is clearly the tomb I have described above.

"SQUEEZE" FROM THE MOSQUE OF SHEIKH MURAD, NEAR JAFFA.

(Referred to in Mr. Hanauer's paper, p. 244.)

By H. C. Kay, Esq.

1 بسم الله الرحمن الرحيم

2 انما يعمر مساجد الله من امن بالله

3 و اليوم الاخر و اقام الصلاة و اتا الزكاة

4 و لم يخش الا الله فعسى اولئك ان يكونوا

5 (من) المهتدين امر بعمارة هذا المسجد المبارك

6 (ا)لفقير الى الله تعالى الامير جمال الدين

7 . . . . . بتاريخ سنة ستة و ثلاثين

1. In the name of God, the Merciful, the Gracious.

2. *But he only shall frequent the temples of God who believeth in God*

3. *and in the last day, who practiseth prayer and payeth the legal alms*

4. *and who feareth none but God. And these shall perhaps be of the number of*

5. *the truly directed.* The restoration of this auspicious mosque was ordered by

6. the needer of God('s help), the Amîr Jamāl ad-dīn

7. . . . . in the year six and thirty . . . .

The words in italics are a verse of the Kurān (chap. ix, verse 18), very commonly carved or painted on the walls, &c., of a mosque.

The beginning of line 7 is absent, and we have consequently not the name of the restorer—only his honorific surname *Jamāl ad-dīn.*

The date of the inscription is imperfect. It gives only the *units* and *tens* of the year (36), the numeral that ought to express the *hundreds* is absent. The actual date might therefore be 736 or 836 or 936, &c.

The word سنة is incorrect. Grammar requires it to be ستّ, not سنّة.

GOLGOTHA OR CALVARY—"A PLACE OF A SKULL."

By J. M. Tenz.

The traditional Calvary in the Church of the Holy Sepulchre is ascended by 18 steps; below are chambers cut in the rock which are used for religious purposes. The rocky hill, when in its natural state, may have been a hillock of the form of a skull, or a skull of some warrior who fell in one of the sieges of Jerusalem may have been found in one of the clefts of the rock to give it that name, and may have led to the strange tradition that the skull of Adam was buried in Golgotha. Origen distinctly asserts that there was a Jewish tradition that the body of Adam was buried in that place—"Place of a Skull." There is no historical evidence to show that there was a public place of execution where Calvary is commonly fixed, nor would that rich man Joseph of Arimathæa have made his new sepulchre so near a place where criminals were put to death. The Roman Guard hurried Jesus away and nailed him to the Cross at the first convenient spot, as there was some fear of a popular insurrection. When they came to the place, called the place of a skull, there they crucified him. This place was near the city. Dr. Schulz states that he traced the remains of a wall, excluding Golgotha, and taking in the pool of Hezekiah. Some recent discoveries made by Dr. C. Schick and others also support this. Before the third, or Agrippa's, wall outside Calvary was built the gate in the second fortification on the east side of that place must have been the principal thoroughfare, as now at the Jaffa Gate, and many coming from the south, west, and north countries would have passed close by that little hill of 14 or 15 feet in height where the crucifixion is believed to have taken place. The gentle rising ground west and north from that hill, and the city wall on the east and south, would have given sufficient accommodation for the chief priests, scribes, elders, and people who stood beholding; and they that passed by reviled, wagging their heads and scoffing.

Now in that place where Jesus was crucified there was a garden and a new sepulchre, there laid they Jesus. The traditional sepulchre is about 140 feet from the chapel of Calvary, only little of the natural rock is visible within the tomb, the rest is covered on all sides with brown marble. A little distance further west are the so-called tombs of Joseph and Nicodemus. They are left in their natural state, and are decidedly Jewish, and must have been without the second or Nehemiah's wall, as none but David and the kings of Judah were allowed to be buried within the city of David. It was not till 10 years after the crucifixion of our Lord and Saviour that Agrippa began the third north wall which enclosed Calvary and the tomb within the city.

Some time after the destruction of Jerusalem by the Romans under Titus, Adrian caused the ploughshare to pass over the ruins of the city

and temple, and built a new city and called it Aelia Capitolina. An edict was issued interdicting every Jew from entering it. Nor did the Christians escape persecution. A temple of Venus was erected on the site of Calvary and tomb to pollute the spot regarded as sacred by Christians. Yet Christians were in time permitted to settle themselves within the walls of the city, and Aelia soon became the seat of a bishopric. Amid all the changes and superstitions it is most unlikely that the sacred spot where the Redemption of the World was completed should be forgotten. The tradition of the site of Calvary and the tomb was anterior to the time attributed to the finding of the Cross by Helena, and the building of the Church of the Holy Sepulchre by her son, Constantine.

I hope Dr. F. J. Bliss, who made important discoveries of the south wall of ancient Jerusalem, may have an opportunity to make further researches of the second or Nehemiah's north wall, which would decide the extent of the city in the time of our Lord.

There is another place outside the Damascus gate which of late years also received the name "Skull Hill." From the nearest road it takes about three or four minutes to ascend to the top of that hill. According to the Jewish tradition it was the place of stoning. The criminal was first cast down from the precipice of that hill, a height of about 50 feet, and if life was still left in him was then stoned to death. Near by is a tomb, believed by some to be the tomb of Christ. But when it was first discovered by the owner of that land and pointed out to Dr. C. Schick, it was full of bones and earth, and when cleared out the mark of a cross was found on the east rock-wall, and another on the north side of the chamber, which are still to be seen, no doubt dating from the crusading time. The entrance to this tomb is more than 2 feet above the ancient level of the rock-floor outside, so that the disciples would not have been required to stoop down to look in the tomb as stated in St. John xx, 4, 5. Where the garden is supposed to have been, large cisterns and walls of ancient buildings have been discovered, and on the rock-floor in the front of the entrance of the tomb is a long trough cut in the solid rock which appears to have been used as a drinking place for cattle. There is no sign that there was at any time a rolling or other stone before the entrance, as in some Jewish tombs, but that it was shut by a door. The arrangement of the interior is the same as that of several other Christian tombs in the vicinity and near St. Stephen's Church, which is now erected on the foundation of a former church of that name, where it is believed St. Stephen was stoned.

NOTES ON THE "QUARTERLY STATEMENT," JULY, 1898.

By Professor Clermont-Ganneau.

P. 141. *The Holy Sepulchre and the Altar of the Tenth Legion Fretensis.*—The Roman inscription at the Khankah, to which reference is made, has been engraved and explained in my essay, "Trois inscriptions de la Xme. légion Fretensis trouvées à Jérusalem" (Paris, 1872), where I have suggested the idea (attributed by Dr. Schick to the Heidelberg professor), that this religious dedication may have reference to the temple of Venus erected on the traditional site of the Holy Sepulchre. We must notice, in connection with this last point of view, the fragment of imperial Roman dedication by one of the Antonines, found in Russian territory, adjacent to the basilica of Constantine, which I published in the "Times" of 1884.

P. 157. *Reliquary* (*of the Crusades*).—I have published and explained in detail ("Revue d'Archéologie Orientale," Vol. II, p. 234, *et seq.*) this extremely curious monument, which, according to the inscriptions engraved upon it, probably contained reliques of the True Cross, the chief apostles and disciples, and of St. Oswald, the ancient Anglo-Saxon King of Northumberland.

P. 159. *The Bust of Olympiodorus.*—Without attempting to prejudge the identity of the person represented, I think I ought to observe that the form of the letters of the inscription engraved below the bust seems to be evidently anterior to the sixth century A.D., at which period the celebrated Neo-Platonist of this name lived.

P. 161. *The Tunnel of Siloam and the Tomb of David.*—I regret that Mr. Birch, before writing his article, was unable to consult a lengthy essay of mine devoted to the question in my "Recueil d'Archéologie Orientale" (Vol. II, pp. 254–294) The brief letter addressed to the "Athenæum," which he takes for the basis of discussion, was necessarily very summary and only contained a portion of the arguments upon which my hypothesis is based. I can only refer him to the essay for all that relates to the discussion relative to the double sinuosity of the canal. As for the "mouth" of the sepulchre, of which Josephus speaks, it is certain that the word στόμιον may be applied to a vertical orifice, such as the opening of a cavern in the side of a mountain, as well as to a horizontal orifice such as the mouth of a well. But if the sepulchre really had an entrance *in the form of a gate*, why did not Josephus simply say ἐπὶ τῇ θύρᾳ, thus employing the very word used by the Evangelists when speaking of the entrance to the tomb of Jesus—a tomb in conformity to the type of the "ordinary" Jewish tombs. If he says ἐπὶ τῷ στομίῳ, it is not without cause. It is to be further observed that the Jewish historian, in his account of the violation of the underground vault by Herod, expressly

uses the characteristic verb κατῆλθεν (*went down*). We may also in this connection refer to the passage ("Antiq." Jud. vii, 15, 3) where he says that the *Thēkæ* of the kings were buried with such skill beneath the ground that they could not be seen by those who entered the *Mnēma*. As for ἐπὶ with the Dative, it may denote *super*-position as well as *juxta*-position. Compare, for example, in the Septuagint version, the manner in which the handling of the large stone which shut "the mouth of the well" of Laban (Genesis xxix, 3, 8, 10)[1] is translated: ἐπὶ τῷ στόματι τοῦ φρέατος. Here we must also notice the word στόμα—of which στόμιον is merely the diminutive—which literally renders the Hebrew על פי הבאר.[2]

P. 169. *Mizpeh and Tell Nasbeh.*—This identification, which is, however, very hypothetical, has already been proposed by the Abbé Raboisson in the "Revue de Terre-Sainte," 1894, and in his paper "Les Maspeh," read before the Congress of Orientalists, 1897 (pp. 3 and *sqq.*). He found on Tell Nasbeh some cut flints, and established the fact that the city of Jerusalem is visible from it.

P. 177. *The Constantinian Basilica of the Holy Sepulchre and the Mosaic Map of Madeba.*—M. Mommert's drawing clearly proves that the three bays, *of unequal height*, made in the front of the basilica, are, as I had maintained, really three *doors* and not three *windows;* this fact deals a decisive blow to M. Schick's theory of the west-east position of the basilica, and justifies the conclusions which I have developed at length elsewhere in regard to the famous Cufic inscription of the Mosque of Omar discovered at this spot (*see* my "Recueil d'Archéologie Orientale," Vol. II, pp. 302-362). I doubt whether it is necessary to see, with M. Mommert, in the superposed horizontal lines figured by the mosaic below the basilica, the representation of the flagstone pavement of the *atrium* which preceded this edifice on the east. We may be permitted to ask ourselves whether they may not rather be the steps of the staircase which, as I have shown, afforded access there. As for M. Mommert's hypothesis, according to which the three sanctuaries of the Resurrection, Calvary, and the Invention of the True Cross, did not constitute three distinct edifices, but rather one *single one* which included them, it appears to me that it is very difficult to reconcile it with the formal statements of Eusebius, Saint Sylvia, and the most ancient pilgrims. I should rather be inclined to believe in the existence of three edifices, distinct, but rising in the interior from one hypæthral hieron, quadrangular, skirted by porticoes, and *surrounded by one enclosure*—the whole comparable in certain respects to the little *haram* of Hebron. The wall in which the Cufic inscription was fitted is said to have been not the wall itself of the front of the basilica, but that which formed the enclosure of the east side.

[1] Verses 2, 8, 10 in the Greek Text.

[2] Notice, in passing, the close analogy between the Hebrew and the Greek as far as the filiation of ideas is concerned, פה and στόμα (mouth) designating in both languages what we call the "edge" of a sword.

NOTES ON GREEK INSCRIPTIONS.

By Dr. A. S. Murray.

In the *Quarterly Statement* for July, 1898, p. 157, Professor Clermont-Ganneau animadverts on certain Greek inscriptions which had been published in the January number. As regards the inscription of *Wady Barada*, the reading Διὶ [Υψ]ίστῳ was not mine, as he assumes. He appears to have overlooked the heading of the communication and the fact that my note was printed in brackets, professing no more than to give some recent information on that epithet. From the photograph of the stone Professor Clermont-Ganneau reads Διὶ Μεγίστῳ, which is right so far as it goes; but he takes no notice of the two letters C Ω at the end of line 1, which appear to me to have survived from the word Σωτῆρι, so that the full phrase would have been Διὶ Σωτῆρι Μεγίστῳ. For this combination of epithets compare C.I. Gr. 3949.

With Professor Brünnow's transcript before him of the inscription at *Jerash*, made while the stone was still unbroken, Professor Clermont-Ganneau remarks that my "attempted restoration wanders far away from the original text," so easy is it to be wise after the event!

THE METALS USED BY THE GREAT NATIONS OF ANTIQUITY.

By Dr. J. H. Gladstone, F.R.S.

[*Reprinted from "Nature," April 21st*, 1898, *by permission of the Editor.*]

Palestine.

Between the great territories of Egypt and Assyria lies a narrow strip of country, small in extent, but very important in the history of civilisation, commerce, and religion. During the period of which we are speaking it was occupied by a succession of different nations. It formed part of the possession of the great Hittite people. We cannot read their inscriptions, and we know little of their history. We have, however, bronze and silver seals that are supposed to belong to them, and curious bronze figures. They seem to have had abundance of silver, probably from the mines of Bulgardagh, in Lycaonia. We read of Abraham purchasing a piece of land from Ephron the Hittite, for which he weighed out "four hundred shekels of silver current money with the merchant." He was, in fact, rich in silver and gold, and among the presents given to Rebekah were jewels of silver and jewels of gold.

The first notice of metals in Palestine to which we can give an approximate date is in connection with the invasion of that land, and other countries further to the eastward, by the great Egyptian king Thothmes III. He led his army through the Plain of Esdraelon, and gained a victory at Megiddo, and amongst the spoil were chariots inlaid with gold, chariots and dishes of silver, copper, lead, and what was apparently iron ore. This took place about B.C. 1600. The original of the long treaty of peace and amity between Katesir, King of the Hittites, and Rameses II is said to have been engraved on tablets of silver.

When the children of Israel left Egypt they were, of course, acquainted with the metals used in that country. They borrowed the jewels of silver and gold of their oppressors, and of these the golden calf was afterwards made. We read, too, of the "brazen serpent,"[1] and of elaborate directions for the use of silver, gold, and brass in the construction of the Tabernacle. Lead is mentioned once, but iron seems to have been unknown to them, the word never occurring in the Book of Exodus; and though it is occasionally mentioned in the later Books of Numbers, Deuteronomy, and Joshua, it is always with reference, not to the Israelites, but to the nations they encountered. Thus we read of the Midianites having gold, silver, copper, iron, tin, and lead, which were to be purified by passing through the fire; of the King of Bashan, a remnant of the Rephaim, who had the rare luxury of an iron bedstead, which was kept afterwards as a curiosity at Rabbah; and of the spoil of the Amorite city of Jericho, comprising gold, silver, copper, and iron. Later on the Canaanites were formidable with their "nine hundred chariots of iron"; and later still the Philistines, whose champion, Goliath of Gath, was clad in armour of bronze, and bore a spear with a heavy head of iron. Among the materials collected by David in rich abundance for the building of the Temple were gold, silver, bronze, and iron; but the best artificers in metals were furnished by Hiram of Tyre, at the request of Solomon. During the reign of the latter there was an immense accumulation of these precious metals in Jerusalem. The comparative value of the different materials is indicated by the words of the prophet in describing the Zion of the future: "For brass I will bring gold, and for iron I will bring silver, and for wood brass, and for stones iron" (Isaiah lx, 17). Another prophet (Jeremiah vi, 29, 30) uses the simile of the refining of silver by the process of cupellation.

The great mound of Tel el Hesy affords a very perfect example of the *débris* of town upon town during many centuries, and of the light that these mounds throw upon the progress of civilisation. When Joshua, after the decisive victory of Bethhoron, led his troops to the plain in the south-west corner of Palestine, he besieged and took Lachish, a city of the Amorites. It then became an important stronghold of the Israelites;

[1] The word "brass" at the time of the translation of our Bible was used indiscriminately for copper or any of its alloys. In the Old Testament it never refers to the alloy of zinc, to which the term is now confined.

its vicissitudes are frequently mentioned at various dates of the sacred history, as well as on the Tel el Amarna tablets. The mound has lately been explored by Messrs. Petrie and Bliss; and in the remains of the Amorite city (perhaps B.C. 1500) there are large rough weapons of war, made of copper without admixture of tin; above this, dating perhaps from 1250 to 800, appear bronze tools, with an occasional piece of silver or lead, but the bronze gradually becomes scarcer, its place being taken by iron, till at the top of the mound there is little else than that metal. The Palestine Exploration Fund has kindly lent me specimens of these finds for exhibition. About B.C. 700 Lachish was the headquarters of Sennacherib, during his invasion of Palestine. From it he sent his messengers to Hezekiah, and at the same town he received the peace-offering of the Jewish king, 300 talents of silver and 30 talents of gold, to raise which he had to despoil his palace and the Temple. In Sennacherib's own version of the transaction the silver is given as 800 talents, and the gold 30. Lachish was finally deserted about 400 B.C.

ILLUSTRATIONS OF THE BOOK OF JOB.

By Lieut.-Colonel CONDER, LL.D., R.E.

THE pictures of social life in the Book of Job are often illustrated both by antiquarian study and by the customs of Arab tribes in our own time. These methods do not, it is true, cast any definite light on the date of the work, since the civilisation described was of great antiquity, but they often serve to bring out the precise meaning. The following notes refer to language, geography, civilisation, religious ideas, and natural history.

Language.—In general character the Hebrew of the book is that of the time of the prophets between Amos and Jeremiah, but so terse and idiomatic in structure as to make the Book of Job perhaps the most difficult in the Old Testament to translate. The Septuagint translators seem to have found this, and often did not apparently understand their text. Jerome was, perhaps, the first to remark that the Arabic sometimes best explains the meaning of words used in this book, and later scholars have observed Aramaic forms and meanings, which indicate a dialect such as that of the Nabatheans or of the Syrians, influencing the writer. These peculiarities do not, however, render it necessary to suppose a late date now that we know from the Moabite Stone and the Samalla texts that outlying dialects of Hebrew, as early as the ninth century B.C., were strongly Aramaic in character. It was probably the speech of the neighbouring land of Uz, which influenced the language of the unknown author. No Persian or other later imported words appear to be used, and in some particulars the language might be thought archaic.

Geography.—It is very generally allowed by scholars that the scene is laid in or near Edom, and not (as Christian tradition held from the fourth

century A.D.) in Bashan. The land of Uz indeed is clearly placed in Edom (Gen. xxxvi, 28; Lam. iv, 21), and near it was Teman, whence Job's first friend, Eliphaz, came (*see* Gen. xxxvi, 15; Obadiah, 8, 9). Not far off were the tribesmen of Seba (*see* Gen. x, 7; xxv, 3), a north Arab tribe, and the district of Tema is also noticed, which is mentioned with the Nabatheans and Kedar not only in the Bible (Gen. xxv, 13, 15; Isaiah xxi, 14; Jer. xxv, 23), but also in the texts of Tiglath Pileser III, who reached these tribes through Gilead in the eighth century B.C. Elihu is mentioned as a descendant of Ram, and thus a kinsman of Caleb (Ruth iv, 19; 1 Chron. ii, 10, 19), and of a family which had its possessions mainly south of Hebron, in the Negeb or south country near Edom. It is possible that this indicates the home of the author of Job,[1] which would agree with the peculiarities of the language. The Casdim (or Chaldeans as translated in the English version) were the "conquerors" of Babylonia. The Babylonians invaded Edom in Abraham's time, but after that date the earliest known attack was that of Tiglath Pileser (in 734 B.C.) after he had become King of Babylon as well as of Assyria. If the word *Casdim* is to be understood as a proper name in Job it is possibly to the raids of this age that we find allusion in the first chapter. The natural scenery described, including snowy mountains, desert, plain, deep valleys, crags, bare rocks covered with broom and with grass after storms, great heat, and on the other hand hail and frost, points (like the natural history of the book) to the region of Edom in a manner perhaps not applicable to any other parts of Palestine. Job was the greatest of the *Beni Kedem*, or "Sons of the East," while on the other hand the word *'Arabah*, used more than once for a desert valley, points geographically to the broad vale west of Edom, between the Dead Sea and Gulf of Akabah. The country generally is described as the home of a tent-dwelling race, but references to a "town" with corn, wine, and oil round it might apply to the site of Petra, as the reference to mining also points to Edom or to the Sinaitic desert, and is not applicable to other parts of Palestine.

The remarkable simile of the torrent fed by snow and dried by heat would well apply to Edom, the mountains of which are snow-covered in winter, but the desert hot in summer :—

"(Ye) my brothers have disappointed like a winter torrent, like a stream of the torrents that pass away. Which are black with ice, the snow being hid above them. When it melts they vanish; by heat they

[1] The country on the borders of Arabia was colonised first by the descendants of Ham and Shem, then by those of Abraham's wife, Keturah, by the sons of Esau following the Ishmaelites, and yet later by the Hebrews, perhaps after David's conquest of Edom (1 Chron. iv, 39-43), when some of the pastoral families of Simeon superseded the older population of Hamitic race, and found pasture in Edom in Hezekiah's reign. Job himself may perhaps have belonged to this tribe, which was scattered in the time of David (*see* verse 21) from its original possessions in the Negeb, or "dry" land round Beersheba—a region afterwards recolonised by Judah.

are wasted from their place. Men turn aside the paths of their way, they ascend to a waste land, and perish. They explored the paths of *Tema:* the caravans of *Seba* expected them. They are confounded for they went confidently thereto, and they seek (or dig water pits). So now are ye" (Job vi, 15–20).

The position of Job seems to be described as that of a pastoral patriarch respected, however, in some neighbouring town, and perhaps even owning an oliveyard :—

"When Shaddai was with me, and my young men round me. When my ways were washed with cream, and the rock squeezed out for me streams of oil. When I went forth up to a town I took my place in the square. The young men hid themselves, the elders stood up and stopped. Princes were scant of words and put their hands on their mouths. . . . . I chose their way and sat as head man, as a king, one that comforts the unhappy" (xxix, 6–25).

Civilisation.—The book is remarkable on the one hand for its pictures of lawless nomad life, and on the other for its knowledge of science, art, law, trade, mining, and settled institutions. It depicts a period of oppression and confusion, while insisting on the ethics of a better age. The picture of Arab raids on the settled inhabitants is an instance of the first of these aspects, indicating a border region between the desert and the tilled lands :—

"They remove landmarks, they steal and pasture flocks. They drive off the orphan's ass, they take the widow's ox in pledge. They turn the needy from the path, the poor of the land hide together. Lo ! the wild asses of the desert go forth to their deeds. Rising early for prey the *'Arabah* is food for their young men. They reap fodder in the plain (*Sadeh*), they pluck the vineyard wickedly. They sleep naked on a rock with no cover from cold. They are wet with mists of mountains, shelterless they cling to a rock. They steal from an orphan's breast,[1] and take a pledge from the poor. Naked they go without clothes, and carry off the sheaf of the hungry. Men must press oil between the walls, they have trodden wine presses but thirst. Men cry from a city and the soul of the wounded cries aloud" (xxiv, 2–12).

The wild desert men were thus apparently confined within regular boundaries, such as now divide village and tribal lands. Their nakedness reminds us that the Arab robber still takes off all clothing and rubs his body with oil or fat before attempting to steal into a village or cattlefold. Of the lowest class of broken men among such nomad tribes we have another vivid notice, recalling the Arab outcasts of to-day :—

"But now those younger than I mock at me, whose fathers I had scorned to set with the dogs of my flock. What strength of hand had they for me ? whose vigour was gone, shrivelled by want and famine, gnawing in a desert, on the eve of ruin and destruction. Plucking salt things from bushes, and broom roots for food. Such as they drive out

[1] Alludes probably to the custom of carrying things in the shirt bosom.

from a people, and cry on as a thief, to abide in clefts of valleys, in earth holes, and on bare rocks, snoring among bushes, and huddling under thorny shrubs. Sons of fools, even nameless sons, scourged from the land" (xxx, 1–8).

The buildings described by Job include stone houses as well as mud walls, and tombs sunk in the rock. The "house of stones" is mentioned in the simile of the spider, the translation of which, however, presents difficulties :—

"The hope of the impious perishes, whose confidence is cut down, and his trust is a spider's house. He leans on it and it will not stand. He strengthens it, but it will not last. He (has made it?) before sunrise, and over his (web?) his suckers go out. His fibres are woven over a circle : he takes hold of a house of stones. Should one ruin him, and refuse to overlook him, lo ! he goes happy on his way, and others spring up amid dust" (viii, 13–19).

In another passage there is perhaps a reference to the desecration of tombs containing treasure, when, after desiring to be buried with princes, Job continues :—

"They await death and are no more. But they dig for him among the hidden treasures, they who rejoice exulting and are glad for they have found a tomb—that of a great man—the way whereto was hid, and God had hedged it in. So sighs are my food and groans my drink, for I fear (this) fear, and it will come on me, and what I dread will happen to me, I can have no peace and no rest, and no quiet, and trouble will come" (iii, 21–26).

In a more famous passage the writing of inscriptions on rock is noticed :—

"Would that my words were now written, would that they were noted in writing, were graven on a rock as witness, with an iron graver and lead. For I have known my Redeemer alive, and the immortal endures beyond the dust, and after my body and members are destroyed, I shall see God, whom I see myself and my eyes behold, and not a stranger" (xix, 23–27).

No references to scrolls occur, but in other passages clay tablets seem to be intended in connection with sealed agreements, and records of trials, such as we find among the cuneiform texts. One passage might perhaps refer to the "case tablets" often found with an envelope of clay over the document :—

"Seal up in a case my fault, and plaster over my sin" (xiv, 17).

The astronomical references in Job are of a simple kind (ix, 9; xxxviii, 31–33), but there is difference of opinion as to the identification of three of the stars or constellations mentioned :—

"He has made *Ash*, *Cesil*, and *Cimah*, and chambers of *Teman*." "Canst thou bind *Cimah* in fetters, or set free *Cesil*, or send the Zodiac (*Mazzaroth*) in its time, or guide *Ash* over his sons?" Probably *Ash* is the great bear revolving round the pole, his "sons" being the little bear. *Cimah* has been thought to be Sirius or the Pleiades, and *Cesil*, Orion.

The stars were watched by early shepherds as indicating seasons, and the antiquity of observations of stars, both in Egypt and in Babylonia, is far greater than any probable date for the Book of Job.

The most remarkable description in this book is, however, that of mining operations. Copper mines still existed in the fourth century A.D., at Fenon, near Petra (see *Quarterly Statement*, July, 1896, p. 244), but the "bluestone," or lapis lazuli, was quarried by the Egyptians in the Sinaitic peninsula, and to these mines, perhaps, the author refers. In Palestine itself mines never appear to have existed :—

"As there is a source of silver and a place of gold that they refine, iron is taken from earth and copper smelted from a stone, man has put an end to darkness and has searched every limit—he who searches for a stone in gloom and shades. He has mined a torrent bed, among a people sojourning in places forgotten of feet going to and fro ; among men who flit over land whence food comes ; and he has turned up its fire-like depths—a place of bluestone its stones are, wherein are speckles of gold, a way that birds of prey have not known, and kite's eye has not spied, sons of the wild beast go not there, no jackal has passed by it. He lays hand on flintstone, he has dug among roots of mountains, by rocks of rivers he cuts, and his eye has seen all things precious ; the drippings of streams he has dammed, and has brought what is hid to light. But Wisdom, where is she found, and where is the place of discernment ? No man has known her price, she is not found in the land of the living. The depth says 'not in me is she,' and the sea says 'not with me.' None gives gold for her, or weighs silver to buy her. She is not valued with gold of Ophir, with precious onyx, or bluestone. Gold and crystal are not her price, or vessels of fine gold her value. None thinks the price of wisdom is more than coral, pearls, and rubies. Topaz of Cush is not her worth, and she is not valued with pure gold" (xxviii, 1–19).

This passage indicates a knowledge of trade extending to the Persian Gulf and to Upper Egypt. But most of the stones noticed were commonly used in Asia as early, at least, as 1500 B.C.

Another remarkable passage describes the honourable burial of a wicked man, who has been successful in life. It contains the remarkable words (as rendered in our version) "the clods of the valley shall be sweet unto him," which is not intelligible. Perhaps *Nakhal* in this case does not mean a "valley" but may be compared with the Arabic *Nahl* for "bees," and "the lumps of bees" may mean the wax or honeycomb, used for embalming. This points not to Egyptian but to native custom. The Babylonians embalmed in honey (Herodotus, i, 198), and Herod is said to have so embalmed Mariamne (Tal. Bab. Baba Bathra, 3, b). In this case the passage becomes clearer :—

"Who will declare his way to his face, or charges him with what he has done ? And he is carried to the tombs, and escorted to the grave. Sweet for him are the honeycombs, and all men crowd after him, and before him numberless" (xxi, 31–33).

The condition of slaves is contrasted in the Book of Job with the duties of a hired man, by whom a soldier seems to be intended from the reference to military duty (vii, 1) which is mentioned again: "All the days of my service I will trust till my relief comes" (xiv, 11); but the humanity of Job to his slaves is mentioned (xxxi, 13), and especially in the recognition (15) that they are human beings like himself.

Religious Ideas.—The name of Jehovah was unknown to Job's Arab friends, and is only once used by Job himself (xii, 9). The morality of Job was that of Semitic peoples generally, including justice, generosity, piety, and kindness to the weak; and until revealed Jehovah seems, perhaps, only to have been distantly heard of by him (xlii, 5). Even in the speech of Elihu there seems to be a reference to the belief in a judgment by God under the sea, which recalls Babylonian ideas, as does the description of Sheol (xvi, 22) as the "Land of no return":—

"The ghosts tremble beneath the waters that they inhabit, Sheol is bare before Him, and Abaddon uncovered" (xxvi, 5, 6).

"Lo, He has spread light round Him, and has hid the roots of the sea, for therein he dooms the peoples" (xxxvi, 30–31).

Another reference by Eliphaz may point to Syrian mythology—*Reseph* being the God of tempest, and the *Beni Reseph* probably the storms:—

"For man is born for labour and storms (*Beni Reseph*) will fly forth" (v, 7).

There is also an allusion to the "ships of reed" which the Phœnicians—like the Egyptians—used to let loose on rivers in memory of Adonis. (My days), says Job, "pass away with the ships of reed" (ix, 26).

Natural History.—The most distinctive plant mentioned in Job is the white broom (*Rothem*, Arabic *Retem*), which is a desert plant, found in the Negeb, in the Jordan valley, in Moab, and Edom, but seldom in Palestine proper. Many of the beasts and birds belong also to the Eastern desert, such as the wild ass, the rock goat or ibex, and the ostrich. With these are noted the lion, jackal, and stag, the eagle, kite, migratory hawk, and the *Reem* or "wild bull," mistranslated "unicorn." The latter still existed in Northern Syria at least as late as the twelfth century B.C., and yet later in Assyria.

The fine description of the horse whose "throat is full of neighing," and who is "unsteady at the voice of the trumpet" (xxxix, 19, 24), and the reference in another passage (xxxix, 18), seem to refer to horses used in war and in hunting, but ridden, and not harnessed to a chariot. This is of interest, because the riding of horses does not appear to have begun very early in Asia. We have an Assyrian representation of a rider in the seventh century B.C., and the Scythians who invaded Palestine in the same century rode horses. In earlier times they were driven, and the dromedary, ass, and perhaps mule, were riding animals long before the horse. In Homer the horse is not ridden in war, but a rider is carved on a Lycian tomb of the fourth century B.C.

Two great beasts, however, are specially described, the notice of

which seems to show a wider knowledge of the world. Behemoth is usually supposed to represent the hippopotamus, but the mention of his "nose," and of a "tail like a cedar," points rather to the elephant. The hippopotamus has hardly any tail. The elephant was still found near the Euphrates in the twelfth century B.C., and perhaps not extinct till some centuries later. Leviathan is generally allowed to be the crocodile, and though perhaps known to the writer from Egyptian accounts, it is to be noted that it still exists in the Crocodile river west of Mount Carmel. The Canaanites (or merchants) are noticed in this connection, and the author may very likely have seen Leviathan in Palestine, and the elephant in North Syria. The translation of both these descriptions requires revision, and is sometimes considered doubtful by scholars :—

"Lo, now Behemoth whom I have made (is) with thee. He eats grass like an ox. His might is in his loins, and in the muscles of his belly. He swings a tail like a cedar. The sinews of his flanks are plaited together. His bones are plates of copper: his ribs like bars of iron. He first is sent on ways that are unmade, they are wasted; for the mountains bring him forth food, where all beasts of the field rejoice. He lies under shady trees, in covert of cane and marsh. The shadow of shady trees covers him, willows of the torrent bed surround him. He drinks a river and hastes not: he is confident, as he (spouts?) what has gone down to his mouth. He perceives for him by eye, and his nose pierces the snares" (xl, 15–24).

The hippopotamus does not visit mountains, and the proposed derivation of Behemoth ("the great ox") from an Egyptian word is, to say the least, doubtful :—

"Wilt thou take Leviathan with a hook, or press his tongue with a cord? Wilt put a withe in his nose, or pierce his jaw with a thorn? Will he make many supplications to thee, or speak thee soft? Will he make a bargain with thee? Wilt take him for a slave for ever? Wilt play with him as a small bird, and bind him for thy girls? Shall caravans go trading on him, and Canaanites go shares in him? Canst thou fill his skin with pricks, or his head with a fish spear? Put thy hand on him, think of the fight, thou shalt not have another. Lo, his courage is belied who is cast down even to see him. None is so bold as to stir him up, and who can stand before him? Who is he that prevents Me to retort that all under the heavens is mine? Nay, I am silent at his babble, and words of boasting, and fine reasoning. Who will be barefaced to harness him, who will come to his headstall in the file[1]? Who will open the doors of his face, terrible with teeth round about, a pride of scaly plates shutting him in close sealed, they come one on the other, and no air can pass them. They cleave one to the other, covering over without division. When he snorts a light sparkles, and how red lidded are his eyes. Flames go from his mouth, sparks of fire leap out. From his nostrils comes a steam, as of a seething pot, or

[1] *Cifl*, a string of camels tied one behind another.

a marsh. His breath could kindle coals, and a flame goes from his mouth. Strength lodges in his neck, and terror runs before him. The flakes of his flesh cleave close on him and are stiff. His heart is hard as a stone, hard as the nether millstone. His rising the deer fear, who stray among the broken banks. Lay at him a sword it holds not, or spear, or dart. He counts iron as chopped straw, copper as rotten wood. A son of the bow cannot make him fly, slingstones are turned to stubble on him, darts are reckoned as stubble, he laughs at the shaking of a javelin. Sharp points are under him, he drags a threshing sledge over the mud.[1] He makes the pool boil like a pot, he makes the lake a (musk ?) pot. Behind him shines a track, he renders the deep hoary. Nothing on earth is like him, which makes him fearless. Of all mighty (beasts) that one sees he is king, over all sons of the wild beast" (xli).

THE VALLEY GATE.

By Professor Theodore F. Wright, Ph.D.

In the *Statement*, 1898, p. 168, the Rev. W. F. Birch assails, in his vivacious manner, my suggestion as to the position of the Valley Gate of Neh. ii, 13, by reiterating his belief that the Valley of Hinnom lay within the city, and was not the western and southern valley outside, which it is generally supposed to have been. In support of his view, which he feels that he has "proved," he states that a part of Jerusalem was of Judah and a part of Benjamin, and that therefore the Valley of Hinnom, which is the boundary defined in Josh. xv, 8, xviii, 16, was the Tyropœon. He makes an inference from an inference from Jer. xxxi 38–40, and understands that he has delivered "three straight blows" which might "suffice to kill the Hinnom myth, if it were mortal"; but he expects that it is only "stunned for a little."

But, on the contrary, the Hinnom idea is rather enlivened by the smart strokes of Mr. Birch. It does not mind proof which runs in a circle. It notes only facts. It meets the declaration that Jerusalem was partly in Judah and partly in Benjamin by asking Mr. Birch to point out Jebus in the list of the towns of Judah. It acknowledges that Judah had attacked Jebus (Judg. i, 8), but it admits no inference from this that Jebus was in part given to Judah because it does not find it named in the list of Joshua xv. However the attack of Judah may be explained, Jebus was not in Judah according to all the Bible statements as to towns and tribal boundaries. As Judah took possession of its territory before the lot was cast at Shiloh for Benjamin, it may

[1] Referring to the sharp stone teeth of a threshing sledge.

be that Judah undertook to conquer the whole southern country, from Jebus to the Negeb and including the district of Simeon, but in no way can this war confuse us as to the localities so distinctly set forth, the north line of Judah in Josh. xv and the south line of Benjamin in Josh. xviii being exactly the same, and both of them passing "south" of Jebus.

A portion of Mr. Birch's reasoning is not plain to me, but I take it that his whole contention falls with his main premise and assumption, that Jerusalem was divided by his Valley of Hinnom between Judah and Benjamin.

Cambridge, U.S.A.

ERRATUM.

Quarterly Statement, July, p. 162.

For "Wescott" *read* "Westcott."

THE SIK, PETRA. *(From a Photo by C. A. Hornstein.)*

(From a Photo by C. A. Hornstein.)

KHASNEH PHAR'AUN (PHARAOH'S TREASURE HOUSE).

VIEW OF SHOBEK. *(From a Photo by C. A. Hornstein.)*

NOAH'S TOMB, KERAK. *(From a Photo by C. A. Hornstein.)*

View of Dairas. (*From a Photo by C. A. Hornstein.*)

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